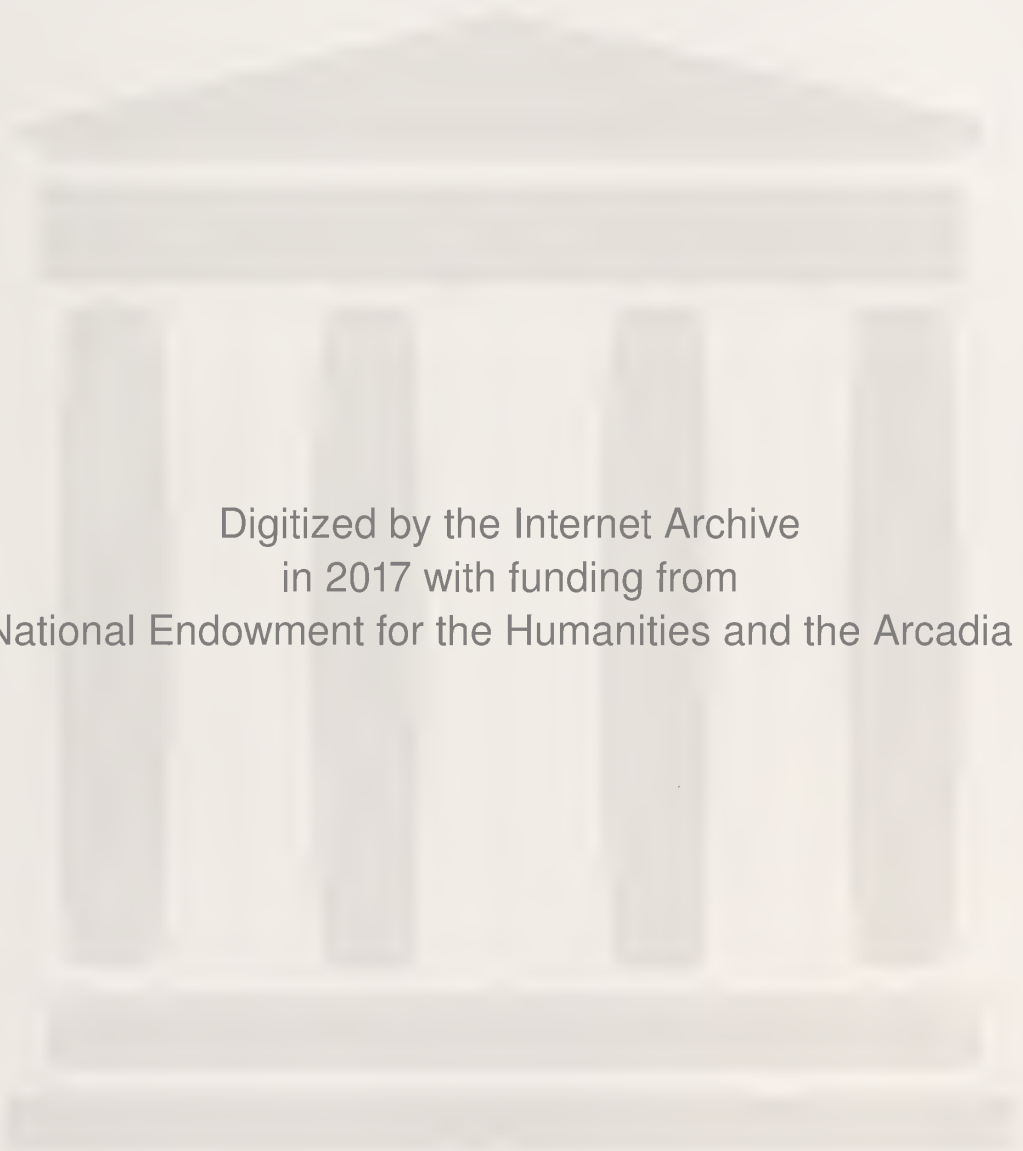

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Alabama Medicine

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PHYSICIANS AS AGENTS

'E.T.' and the Third Factor in Healing

– Dr. Canup
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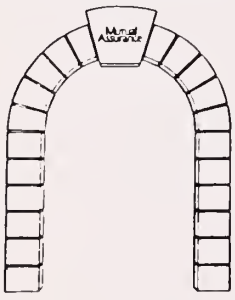

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EXECUTIVE DIRECTOR

S. Lon Conner
Executive Director, MASA

There is Some Luddite in All of Us

Even as we are being swept along by the treacherous currents of the Third Wave of information transfer technology, there is a portion of a common ambivalence in all of us: this brave new world contains many potential benefits to humanity but many hazards as well. Besides, revolutionary change is always unsettling.

It was ever thus. But the rate of change nowadays has no real precedent in mankind's long struggle toward what each generation has seen as the light at the end of its particular tunnel. Every age has had occasion to lament the passing of the old even as it hailed the new. Intuitively, we all know the truth of Emerson's law of compensation, loosely remembered as: for everything we gain, we lose something; for everything we lose, we gain something. The past, however painful it might have been when it was the present, takes on ever more appealing colors as it recedes in time and memory.

Living here in the Deep South, the virtues of air conditioning can hardly be overstated. But air conditioned homes and the idiot box have combined to destroy what was once the very symbol of community: the front porch. These days you rarely see your neighbor; some people confess to not even knowing who their neighbors are after years of living in close proximity.

Time was when people gathered of a summer evening on porches and on sidewalks to tell stories, exchange gossip, laugh and sing, revel in each other's companionship. No more.

During the Great Depression, the South suffered greater devastation than any other region and yet here we demonstrated the nation's finest example of neighbor helping neighbor, sharing what little we had, finding mutual comfort and hope for a better tomorrow. No one in his right mind would want a revisitation of that horror, but those who lived through it will tell you that it brought into sharp relief some of the best qualities of people. Among those who didn't experience these frightful years, the Depression has even taken on a certain weird nostalgia.

Locked in our high-tech cocoons today few of us know or really care what is happening next door and certainly not a block away. Even if we make so bold as to sally forth on foot some night, we would be fearful of a mugging or drive-by shooting. We have all the information about the world and the entertainment most of us could want right in our homes. As if that weren't enough, converging technology will soon offer us 500 channels or more, they tell us.

No need to ever venture out in search of escape or enlightenment: what you can't find on your TV you can find on your PC. Soon, they say, the computer, the telly and the phone will merge into one magic box. Wonderful! If the art of conversation is not already dead, this will surely be the coup de grace.

An editorial in The New Yorker (Aug. 14, p. 2), entitled "E Pluribus Unabomber" resonated somewhere in my brain as it might in yours. The proposition advanced by the writer, that there is a little bit of the Unabomber in all of us, seemed shocking at first, but there is a great truth in it. Like this madman, most of us are anxious about the computerized future. Like him, we question whether all of that sails under the flag of progress and the attendant conquest of nature is really progress after all.

And that is not new either. The writer reminds us, as I have done previously in this space, of the Luddites who blasted the North of England in 1811 and 1812, smashing and burning the new power

looms and textile mills that were rapidly displacing cottage hand weavers and combers. The roving bands of masked men and woman simply declared war on the Industrial Revolution. Their leader was said to be one Ned Ludd – hence the name, Luddites, branded on all of us who today fear some of the consequences, intended or unintended, of the Third Wave.

Ned Ludd probably never existed but his spirit survives even here in the closing years of the 20th Century. Many physicians, I know, are apprehensive about the profound effects of ever shifting networked knowledge and machine medicine on their science and art. While they would not give up the wonders now in their armamentarium, there are moments of reflection when they may entertain a small doubt about the price being paid for all that is labeled technological progress. There have already been examples when that price seemed excessive, removing them further and further from hands-on patient care.

Physicians may be sure that patients themselves are similarly disturbed by the widening gulf between them and "their doctor," even when they can't find words to express their concern. And certainly third party payers have done nothing but widen this gap in many ways, not least by their remote and Olympian determinations of "medical necessity." Reviewer software is fast becoming the final authority in the protocols of care. You're not sick enough, computers are sometimes telling patients, until we say your are.

The ambivalence in Western democracies towards the science and technology that gave us so much of what we call progress and our high standard of living goes back a way, as The New Yorker essayist reminds us:

"The Enlightenment [18th Century thought, also called the Age of Reason, generated by the scientific and intellectual advancements of the 17th Century] welcomed science for its promise of liberation from superstition and want. For a growing number of educated people during the century and a half following the Luddite revolution, however, the promise soured.

"Though the Promethean power of the machine had its enthusiasts, of course, critics indicted it for producing not only technological unemployment but also the depersonalization and regimentation of work, the despoliation of nature, and, finally, the indiscriminate slaughter of total war."

Fast forward to the end of the 20th Century:

"Technology is now blamed not only for its dramatic disasters – Three Mile Island and Chernobyl and the Exxon Valdez - but also for the insidious, alienating displacement of conversation and community by television watching and net surfing."

It is wrong to suppose that a mad bomber apparently targeting those on the cutting edge of computer science, genetics and progress in general is the sole opposition to a future defined by cyberspace. Kirkpatrick Sale, a respected environmentalist and historian, inveighs against the computer in his recent book, Rebels Against the Future. He writes: "It is the computer and those who feed and handle it who reign supreme.... Control of information is control of power."

In his lectures, he sometimes drives his point home by sledgehammering a computer to bits.

Similarly, the revolution in the biomedical sciences has drawn attack from many diverse groups, with some attacking the desacralization of life in genetic science as marketed in commercial technology. To many religious leaders the manipulation of genes is a direct affront to God. Feminists have assailed the new reproductive technologies as turning women into mere babymaking machines. And surrogate mother stories make allies of many groups with otherwise dissimilar agendas.

In the movie The Net computer networks become instruments of evil, playing on a widespread public anxiety. A colleague here at the Association headquarters had a recent experience that he found unsettling. A downloaded World Wide Web navigation program he had been "beta testing" crashed. He informed the commercial provider by e-mail of this happenstance. He was directed to delete the program from his hard drive, with the advisory that it would then "regenerate itself," on its surface a pretty scary thought. (And it did do just that, somehow.)

Even the Unabomber himself reveals his love/hate ambivalence toward computers and progress in general. He has demanded that The New York Times digitally typset his lengthy screeds, using computers he loathes, and that the newspaper print it on rolls of paper made from the trees he has bombed others for cutting. Now that's ambivalence.

Many of us, physicians and non physicians alike, wish we could somehow enjoy the rich benefits of computers up to a point and then forbid them beyond that point. CT scanning, MRI, the Medline, computerized medical records, the electronic libraries of medical information – all good. But anonymous clerks on some distant 800 line, reviewing one of your cases with software purporting to have assimilated the knowledge of experts who never saw the patient in question? An outrage.

I expect that our ambivalence will intensify and that the mixed feelings we have about the Information Age will remain unresolved. After all, there are a few among us who have never become reconciled to Second Wave industrialization ushered in by the steam engine.

PRESIDENT'S PAGE

C. Neal Canup, M.D.
President, MASA

Physicians As Agents

What are we implying with the statement that "Physicians are Agents"? Agents usually represent something – a product – an idea – a field of thought, etc. We as physicians are agents who represent something to our patients and to the public in general.

First, we are agents of science. We should (must) know most of the current scientific information available about the chemical, biological, and physiological aspects of disease or injured states. This is not a small amount of information.

Second, we are agents of technology. The amount and number of tests, procedures, and processes available to us to diagnose and treat our patients have become staggering and in some cases almost miraculous. To understand the indications to use in specificity of the procedures is in itself a very huge challenge. Also, to use this information and procedures in a cost-effective way, and to be legally insulated is even a larger challenge.

Third, we are agents of our personality, behavior, and yes – probably even our character. It is in this area, shall we say a feeling and sensitivity, that we are most likely to be able to come in conflict with ourselves and with our colleagues. It can be used too little, or not at all. In some cases, we older physicians can depend on it too much. It is this type of agency that many agree is very important, yet, at the same time, it is extremely difficult, if not impossible, to quantify, measure, or grade. As a result of its' difficulty to quantify, then many choose to ignore or deny its' value.

How we feel, talk, and act with each patient that we see is, I believe, as important as the science and technology we represent.

I read an article years ago about an atherosclerotic study done on rabbits by medical students at Ohio State University. The same genetic rabbits were fed a high fat diet for a given period of time, then sacrificed to assess the amount of atherosclerosis that they had developed. The results were puzzling. Two groups had severe atherosclerosis develop in their rabbits, a third group had very little atherosclerosis develop (same rabbits, same diet). After much study and analysis, the only variable was the caretaker. The group with little atherosclerosis was cared for by a young female study who had named, held, touched, and talked to her rabbits daily. What does this mean? "Difficult to quantify." A physician, for whom I have highest admiration and respect, Dr. Gale Stephens, retired chairman emeritus of the Department of Family Practice at the University of Alabama in Birmingham, wrote a review of the movie "E.T.", published in the throw away medical journal of continuing education. He framed his review as "Resurrection or Resuscitation." E.T.'s near death response to Elliott's – "I love you E.T.!" At that moment, the creature stirs in response, the glow of its beating heart returns and a nearby pot of wilted chrysanthemums recover their freshness and in sec-

onds a resurrection occurred. Dr. Stephens makes the point that if resuscitation works – that in itself is reward enough. He reminds us that whatever else may be involved in recovery from illness or injury – gaining a new lease on life is intimately connected to the quality of personal relationships communicated to the victim. Mere resuscitation is not enough. As a matter of fact, the movie reminds us of the profound truth that resurrections are not about corpses at all – one can be resurrected from despair, meaninglessness and the living death of loneliness. Resurrection can occur anytime people are motivated by love. I believe our patients very quickly know our true motivation. They know whether we care or not.

Not to be conscious of and use this third agency is to ignore a large portion of the information and resources available to us to treat our patients. I believe the "outcome" are more acceptable and satisfying to our patients and their family and for our own and our patients true healing we must be agents of caring.

We are agents of science and we must never forget it. We are agents of technology and must always use it. We are agents of caring and only with all three does true healing occur.

Medical Research, Past, Present, And Future

*James A. Pittman, Jr., M.D.**

Thank you for inviting me to talk with you this evening, and congratulations on the activities of Sigma XI here at UAB. It is a good and worthy organization of high purpose, and I hope it thrives.

I've been asked to talk with you about "Medical Research, Past, Present, and Future." As you can easily see, this is a talk of many volumes – however, I promise not to talk more than six hours this time.

There are two main points:

(1.) The *Definition* of science and scientific research,

and

(2) Research, including medical research, will be around as long as any of us live.

As for the definition, *Science* requires two attributes: (a) theory, and (b) experiment or experience. In other words, there were many Philosophers, including Aristotle and his colleagues, who had grand theories about the universe, and some were very accurate. But many were ridiculous. In the Middle Ages and early Renaissance the dominant philosophy and intellectual activity was *scholasticism*. This was characterized by close adherence to the theories and teachings of Aristotle. If one wished to know how many teeth were in a cow, you looked it up in Aristotle for an answer. Most dictionary definitions today emphasize that "science is a body of knowledge" or a "special branch of knowledge" or "knowledge of the physical and natural world."

Science is far more than knowledge. It is a *method* and *attitude* by which we reach knowledge. The method is surely familiar to us all by now: observation, hypothesis, deduction, testing or experiment, and conclusion. That is, we start with some observation of idea and wonder about it. We then *postulate* "What if," and we *deduce* what should observe if our postulate is correct or incorrect. Then we make an additional observation or experiment and examine the results. Finally, we either reject our original postulate or accept it and incorporate it into our existing *theories*.

We seldom think much about the massive edifice of **theory** which underlies modern science and philosophy, but it is there, and we neglect it all our peril.

Some people are compulsive experimenters. They intensely pursue experiments 23 hours a day without **thinking** enough about them or their significance.

In science, **no experiment is any good without relating closely to theory, and no theory is any good without experiment.**

There is a great deal of philosophy underlying what we know as science today, and most of this began to arise when Europe awoke from the Middle Ages and began to ask for sorts of questions, including formerly forbidden questions, during the Renaissance. Today we often think of science and religion as separate from one another. But they have always been closely related.

Science probably arose in prehistoric times when people began to settle into villages and engage in agriculture. It was necessary to know the seasons: When would it rain? When would the weather turn warm so that spring planting could begin? When was the dry season? and so on. In those days before light pollution from great cities the stars were brilliant, as you may have seen at 2 a.m. camping high on a mountain in the American West – perhaps Idaho or Wyoming – on an absolutely cloudless night. The observation was that sometimes it remained cold for months, or hot for months, and that the situation of the stars changed in relation to these seasons. Astronomy probably had a practical purpose from the beginning.

At the same time commerce and the activities of daily life required some sort of system of quantifying things. So mathematics also had its origin in practical matters.

Given the shape and size of the Mediterranean Sea, it is not surprising that as the first settlements began to grow into towns, then cities, these matters of astronomy and mathematics became intensely interesting to the rulers and the people, giving rise to some of the first systematic assessments of nature[1] – Indeed, perhaps the very first in history.

The Greeks also had another characteristic: discussion and disputation. They were known mainly for their thoughts and theories, but they were not entirely devoid of experiment (witness Archimedes's shouting "Eureka!" upon discovering a method of determining the purity of gold). But their main method of evaluating postulates and theories was discussion (e.g., the **Dialogues** of Plato).

*Originally given as a talk to the Sigma Xi Society at UAB.

Some of the publications of Greco-Roman times have come to us, largely saved by the Arabs during the Christian Middle Ages or Europe, when books as well as heretics were burned. The church, however, established first upon the decaying Roman Empire by the Emperor Constantine, who converted on his deathbed and made Christianity the official state religion, then by Pope Leo III and Charlemagne as the philosophical underpinnings of "the Holy Roman Empire," unwittingly facilitated the development of modern science by making Latin the scholarly language of Europe. Thus, theologians and philosophers from Germany could readily lecture to and converse with those from France, England, Spain, Italy, Northern Africa and the Middle East (to some extent), and other areas. A truly learned man could lecture or converse in both Latin and Greek as well as his native language, and usually several others.

One can pick any of many dates for the beginning of the modern scientific era.[2] **Fifteen forty-three** is a good one. That was the year of two great publications: Vesalius's *Fabrica* and Copernicus's *Revolutionibus Orbium Coelestium*. The *Revolutionibus* was more a carefully reasoned work, a work "of close and subtle reasoning, still retaining many medieval elements ... hardly a great exposition of what we now call the experimental method."[3] We may take the work of Vesalius as the first great modern exposition of the careful observation and experiment we now associate with science. The two of these, Vesalius and Copernicus, destroyed our old traditions of beliefs and theories and began setting the stage for the modern scientific era.

We must note, however, that history is more of a continuum than a series of eras or periods, however must we try to divide it up. Why were the cadavers so much more plentiful in sixteenth century Italy than in Vesalius's native Brussels, or Louvain or Paris where he studied? Art probably had something to do with this, as Michelangelo and Leonardo da Vinci needed corpses to dissect in order to achieve the understanding of anatomy needed to accurately depict the unclothed human body. (In fairness, Raphael and Dürer were also rising as artists at the time.) Leonardo in particular was interested in dissections, and his curiosity led them to an accurate understanding that the valves of the heart forced the blood to move in one direction only. He also correctly concluded, after experiments trying to blow air via the trachea through the lungs into the heart, that Galen was indeed wrong: none of the air inspired into the lungs moves into the heart via the pulmonary vein (Galen's *Arteria Venalis*). He came close to describing the circulation of the blood, but he too was too mired in Galenism to make the leap to the new idea.

The year **1600 A.D.** is also a crucial year in the development of modern science. That year marked the burning at the stake of Giordano Bruno for meddling with theologically acceptable ideas about astronomy, though he was another medievalist and not a modern experimenter. It also marked the introduction of new optical devices – the telescope and the microscope, probably made by obscure lens grinders in Holland shortly before 1600. That same year, 1600, William Gilbert published his treatise on magnetism, and that year Tycho Brahe of Denmark handed over the tables of his astronomical observations to Johannes Keppler in Prague. In 1609 Galileo made the telescope and microscope available to the scientific community and published on both.

Back at the anatomy lab in Padua, Girolamo Fabricio of Aquapendente, otherwise known as Fabricius, discovered the valves of the veins and described them in his book **De Venarum Ostiolis** – meaning little doors. However, he too was looking backwards too much and too much stuck in Galen and Avicenna.

Others also missed describing and publicizing (i.e., discovering) the circulation of the blood. Ibn-an-Nafis, working in Damascus and Cairo in the thirteenth century at the heights of Arab scholarship, had already refuted Galen in saying that the interventricular septum of the heart is solid and nonporous. Ibn-an-Nafis in fact described the lesser circulation. However, his work was lost until 1924 – again, he cannot be said to have discovered it, because of his bad luck in lack of lasting publicity. Similarly, Realdo Colombo described the lesser circulation but missed the overall picture. Miguel Serveto (Servetus), the Spanish theologian and physician, actually published a book which included descriptions and ideas similar to those of Ibn-an-Nafis. But an influential man named John Calvin found some ideas in the book heretical, so had all the books burned. He incidentally also had Servetus burned, thereby giving Presbyterians something to live down in later centuries. Three of the books escaped, but they were found only long after Harvey's classic description of the circulation in 1628, the decade after publication of the King James Version of the Bible and the death of Shakespeare.

It might be worth your time to go by the Reynolds Historical Library at UAB sometime to examine some of the books mentioned here, and others. The Reynolds owns two copies of Vesalius's **Fabricius** and one of Harvey's **De Motu Cordis**, his 1628 description of the circulation of the blood. It is really a great collection, and we are lucky to have it right here in Alabama.

We are running out of time, and we've barely reached the 17th century. During that century science began to explode, and the explosion continued into the 18th centuries, with discoveries compound-

ing on discoveries – Leuwenhoek and his microscopes and "little animals;" the opening of the great hospitals of Europe; the great French physician and physiologists P.C.A. Louis and developed the "numerical method" of making reports; the development of new instruments like the stethescope, the ophthalmoscope (invented by Helmholtz, who also discovered the law of conservation of energy), the thermometer, and other instruments; Louis Pasteur and Robert Koch and the germ theory of disease; the x-rays discovered exactly 100 years ago this year, and radioactivity a few months later, then the great burst of activities in this century. The history of science and of medicine fills many libraries around the world, such as the National Library of Medicine at the NIH (U.S. National Institutes of Health at Bethesda, Maryland) and the granddaddy of them all, the Library of the Wellcome Trust in London, England.

One aspect is particularly important for our discussion tonight: **Nosology**. How many of you know what that is? Most doctors these days appear not to know, despite the fact that they work with it every day if they are practicing physicians.

Nosology is the classification of diseases. There are books on this also,[4] and it is a fascinating discussion, beginning with Aristotle and Galen and their 4 humors and the idea that diseases are due to *imbalances* between the four. Even though these ancient concepts began to change around the time of Vesalius, with assaults from Paracelsus and others, American physicians in 1799 were still sufficiently uninformed that they acted on these theories and *bled George Washington, our first president, to death with their treatments!*

I've talked most about scientific research of the past, since that is probably the least well known to you. The present is only too well known. At the same time it presents the greatest opportunities for major advances anytime in history, on the one side, and the looming of major financial difficulties on the other.

As Adam said to Eve when they were being kicked out of the Garden of Eden, "Don't worry, darling. It's just that we are living in a time of transition."

In fact, **all times are times of transition. Change** is the ultimate reality, as Heraclitus pointed out some 2,000 years ago. Two things that I think are underappreciated now, and probably always, are (1) the tremendously *dynamic* and *changing* nature of things; and (2) the **evolutionary chain of causation** or maybe better **net of causation**. We don't have time to discuss these tonight, and probably you would not be interested anyhow. But the fact is that **dynamism** of things is among us everywhere, and in us. It is most evident in the beating of the heart and breathing in and out of air, the taking of food and excretion of waste, in the gross movements of our bodies – but also all through the microstructure of ourselves. Goldstein and Brown, the Nobel laureates for cholesterol work, showed that the coated pits in the cells receiving cholesterol make round trips from the cell surface to the interior and back again several times each minute. Minute red cells squeeze through capillaries constantly, just as rivers erode the earth into the sea every moment of the day and night, as we whirl around the sun some 17,000 miles an hour, and as our solar system spins in the Milky Way.

We **know** things will change. We, as scientists, also believe in cause and effect. Certainly, determinism exists. But choices count, because they have consequences. We must use all our efforts in the days and years ahead to **educate the public** about science. It is on public understanding that our future depends. Science is fueled by two things: (1) the desire to understand, and (2) the desire for practical results – the cure for cancer, for example.

It is pathetic and frightening that more than one-third of recent graduates from Harvard College (yes, *the* Harvard College in Massachusetts), when queried recently, had no idea at all of why it is warmer in the summer and colder in the winter. Another third had only vague notions. Less than one-third could give anything like a coherent account. Similar results are available from other prominent universities. The levels of ignorance in our society are truly horrifying. Recently I was in Asia, especially Taiwan and Beijing. Believe me, the young people there are far, far better informed on such matters than ours, despite a government on the mainland that often seems to have little regard for the truth.

H.G. Wells, the British writer and author of science fiction, said, "civilization is the race between education and catastrophe." We, as scientists and people of good will, had better get busy.

Research will continue, however meagerly funded and difficult. As a conclusion I will give you one reprint and refer you to a pamphlet. The pamphlet is an NIH publication describing some of the savings to society from the research done, in terms of dollars in and dollars out – a cost/benefits description. It is worth your examination and publicizing.

Last is a recent publication which just came out this year attacking the notion that research and technology are the culprits behind our current problems with health care costs.

I would like to tell you about Osler's **Alabama student**, a practitioner who did amazingly scholarly work here in Alabama despite his remoteness from great academic centers and relative poverty – but that's another story.

Thanks for the dinner!

1. The whole of science is very concerned with *words* and *terminology,* particularly as these relate to logic and clarity of thought, expression, and communication. The word "Nature" here is used as synonymous with the universe and all that is in it, including the invisible Laws of Nature.

2. One point of interest as we near the year which will mark the end of not only his century, but also this millennium, is that the calendar itself seems to be falling apart in this chaos of ethnicities and cultures. Some non-Christian scholars disapprove of "A.D." (Anno Domini, or year of our Lord) as imperious and insist on "C.E." (for "Common Era," or perhaps "Christian Era"). Then there are the Moslems, who insist on "A.H." (After Hegira), the Jews, who date their calendar "from the beginning of the world," (even though it does not start with Bishop Usher's reckoning of 4004 B.C. – excuse me: B.C.E.). The Chinese have yet another system and another date. And so on. Maybe the scientists can give us a more generally agreeable system of dating things, though I doubt that will occur soon.

3. Singer C and Underwood EA: **A Short History of Medicine.** Oxford, Oxford University Press, 1962, p. 92.

4. Faber, Knud: **Nosography: The Evolution of Clinical Medicine in Modern Times.** New York, Paul B. Hoeber, Inc., 1919 and 1930 (2nd edition). Reprinted by AMS Press, Inc., New York, N.Y., 1978.

Drug Use and Crime in Mobile, Alabama, 1991-1992*

*by G. David Johnson, Ph.D.**
*Daniel Abbott, BA**
Bernard H. Eichold II, MD, Dr.P.H.†
*Charles J. Hoff, Ph.D.***

Introduction

The use of illicit drugs continues to be a major health and social problem for our cities, counties, and nation. Illicit drug usage has direct medical outcomes (e.g., HIV infection) affecting the individual and the less obvious indirect consequences (e.g., violence) impacting the whole community. From May 1991 until September 1992, the Mobile County Sheriff's Department conducted urinalysis to detect recent marijuana and cocaine use by new felony arrestees incarcerated at the Mobile Metro Jail. Drug test outcomes are presented by month for the 17 month testing period. These results document the strong correlation between drug use and crime which has been found in other American cities.[1] In addition, month by month analysis reveals trends in drug use among arrestees, some appearing to be unique to this metropolitan area.

Setting

The Mobile Metro Jail, which houses felony arrestees apprehended in Mobile County, is administered jointly by the County and the City of Mobile. The total population for the County in 1990 was 378,643, the majority of whom live in the City. The racial composition of the County is 67% white, 31% black, and 2% other racial categories. The median family income in the County is $27,601.[2]

Methods

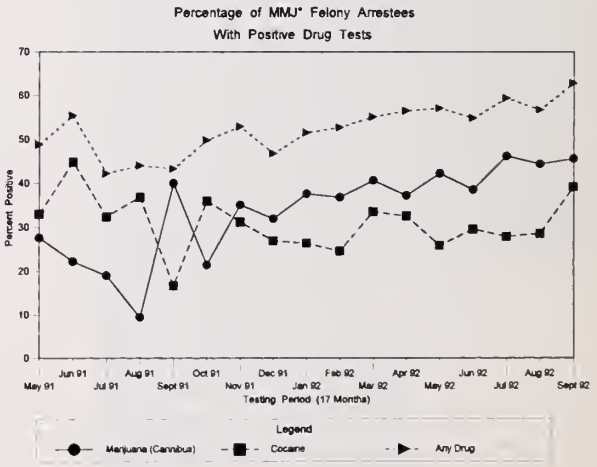
In 1991, the Mobile County Commission authorized sufficient funds to test most new felony arrestees for a 17 month period. Arrestees were tested, on a mandatory basis, within 24 hours of their initial incarceration at the jail. Technically. the sampling schema used by the Sheriff's Department must be described as a convenience sample, since no randomizing procedure was used. For the last twelve months of the testing period, the majority of male and female felony arrestees were tested. Smaller numbers were tested in the first five months (May to September 1991), as the program was being established. The urinalysis procedure was ADX FPIA (Flourenscence Polarization Immunoassy), which is marketed and supported by Abbott Diagnostics. A Justice Department Study found that ADX technology yielded very few false positives for cocaine and marijuana (<4 %), and correctly identified over 80% of all true positives for each drug.[3] According to Visher and McFadden (1991), these validity levels are as high as that of any available testing technology short of Gas Chromatography/Mass Spectrometry.[3]

Results

Table 1 and Figure 1 present the descriptive drug test results. A majority of the arrestees tested positive for at least one drug during eleven of the seventeen months (June and November 1991 and January through September 1992). Marijuana was the drug of choice among Mobile Metro Jail felony arrestees for 12 of the 17 month testing period. Moreover, the percentage testing positive for marijuana increased substantially throughout the period.

Table 2 presents results of a regression analysis testing the significance of the secular trends in drug use through the period. The upward trend in marijuana use, as for the use of any drug, is statistically significant ($p < .001$). No statistically significant trend in cocaine use is observed for the data.

Figure 1



Discussion and Conclusions

The most important finding in the present study is

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Table 1

Percentage of Mobile Metro Jail inmates charged with felonies testing positive for marijuana, cocaine, or for either drug, by month, from May 1991 to September 1992

MONTH	YEAR	NUMBER TESTED	Percent Tested Positive		
			Marijuana (Cannibus)	Cocaine	Any Drug
May	1991	203	27.6	33.0	48.8
June	1991	271	22.2	44.8	55.4
July	1991	173	19.0	32.4	42.2
August	1991	84	9.5	36.9	44.0
September	1991	30	40.0	16.7	43.3
October	1991	211	21.4	36.0	49.8
November	1991	407	35.1	31.2	52.9
December	1991	379	31.9	26.9	46.7
January	1992	384	37.6	26.3	51.5
February	1992	411	36.8	24.5	52.7
March	1992	474	40.6	33.5	55.1
April	1992	448	37.6	32.5	56.5
May	1992	420	40.6	25.8	57.1
June	1992	429	37.2	29.5	54.8
July	1992	421	46.1	27.8	59.4
August	1992	329	44.3	28.5	56.7
September	1992	159	45.5	39.1	62.8

that for Mobile, as for most of the nation, drug use is very common among individuals arrested for suspected commission of crimes. The causal connections between drugs and crime are no doubt complex. It is plausible that many individuals dependent on illicit drugs resort to property crime, in particular, to finance their habit. It is also well documented that certain drugs, notably cocaine in this instance, facilitate violent behaviors. Further, most drugs are associated with reduction of inhibitions, and thus contribute to the commission of additional crimes. It is also likely, in at least some cases, that the causality is reversed: commission of other crimes causing drug use. In these instances, individuals intending to commit crimes may use drugs to reduce anxiety surrounding the criminal act. Finally, it is also possible that part of the association between crime and drugs is not causally related at all. For these individuals, the same factors that facilitate criminal behavior (e.a.. lack of self control) also may give rise to drug use. Regardless of which of these causal connections is most important, there can be no doubt that drug use and other criminal behavior covary at a very high rate.

Table 2

Regression of Month on Drug Use (Marijuana/Cocaine/Either Drug) for Mobile Metro Jail Felony Arrestees May 1991 through September 1992

A. Dependent Variable: Marijuana

Variable	Coeff.	S.E.	Std. Coeff.	T	P (2-tail)
Constant	18.906	3.280	0.000	5.764	0.000
Month	1.661	0.320	0.801	5.189	0.000

$F = 26.924$ $P < 0.001$ $R^2 = 0.64$

B. Dependent Variable: Cocaine

Variable	Coeff.	S.E.	Std. Coeff.	T	P (2-tail)
Constant	33.151	3.304	0.000	10.034	0.000
Month	-0.250	0.322	-0.196	- 0.774	0.451

$F = 0.599$ $P = 0.599$ (NS) $R^2 = 0.04$

C. Dependent Variable: Either Drug

Variable	Coeff.	S.E.	Std. Coeff.	T	P (2-tail)
Constant	44.306	1.954	0.000	22.674	0.000
Month	0.892	0.191	0.770	4.678	0.000

$F = 21.88$ $P < 0.001$ $R^2 = 0.59$

It is also useful to compare arrestee drug use trends in Mobile with those of other cities. The National Institute of Justice (an agency of the Department of Justice) monitors arrestee drug use via its Drug Use Forecasting (DUF) program. DUF testing is conducted in 24 American cities and counties. Comparisons between Mobile and the DUF sites can be made for the period of 1991-1992. A particular useful comparison is between Mobile and Jefferson Counties (which includes the city of Birmingham, Alabama). In comparison to Mobile, the Jefferson County data for 1991-2 reveal the following: (1) cocaine is the drug of choice among arrestees in Jefferson County, with 48% testing positive in the average month; (2) overall drug use is higher in Jefferson, with 62% testing positive on average; and (3) marijuana use increased in 1992, as it did in Mobile, but at substantially lower rates, with 19% testing positive for Jefferson in the average month (National Institute of Justice 1994). What explains the lower rates of drug use generally, and cocaine products in particular, for Mobile? The most likely explanation concerns population size. It is well established that the larger the Metropolitan area, the higher the expected crime rate (Felson 1994), and of course illicit drug use is a crime.[4] Why would criminals prefer to use marijuana in Mobile, but cocaine in Jefferson County? This is harder to explain. It may have to do with the seriousness of the respective offenses, or may have to do with the relative availability of the drugs in the two areas. The larger trend, present in Mobile and Jefferson Counties, is the increase in positive tests for marijuana use. Increases for marijuana use occurred during 1992 in 18 of the 24 DUF sites, while cocaine use remained largely unchanged from 1990 to 1992 in the nation at large. This trend may be influenced by drug availability and by a demand change. It will be important to monitor this trend in the future.

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The Diaries of Dr. Samuel Patton Hand 1911-1917

*by W. Foster Eich, M.D.**

Part I

Abstract

Dr. Samuel Patton Hand practiced medicine in Demopolis, Alabama, for many years before his death in 1917. During the last seven years of his life he kept detailed diaries. These diaries have been passed down through the family since his death. These papers review the diaries, which present an intimate look at the life of an Alabama small-town doctor during this period. This first paper deals with the doctor's daily personal and social life, and looks at the transportation in Dr. Hand's day and its effect on his medical practice. The next paper will examine purely medical matters. A third paper will look at excerpts from a notebook or "Pearl book" the doctor kept.

THE DOCTOR'S DAILY LIFE

Dr. Samuel Patton Hand practiced medicine in Demopolis, Alabama for 30 years before his death in 1917. During the last 7 years of his life he kept detailed diaries.

These diaries are in the possession of his grandchildren, the Graves family of Demopolis.[1] The original diaries are not available to the public, but Samuel Hand Graves, Doctor Hand's grandson, with the help of his wife, Eugenia Graves, has recently transcribed them and published them privately for the family. A copy of the transcription has been donated to the Reynolds Historical Library at the University of Alabama at Birmingham for scholarly use. This paper will review the diaries, which present interesting vignettes of the life of an Alabama small-town doctor's life in an early decade of the twentieth century.

The diaries were recorded in little red hardback books, given to the doctor by the company that made Pepto-Mangan (Gude), a hematinic. On each page of the diaries is either an advertisement for Pepto-Mangan or a "pearl" the company wanted to pass to the profession.

412 South Cedar Street, Florence, Alabama 35630

According to data obtained from the American Medical Association, Dr. Hand was born in Sumter County, Alabama, December 17, 1859. He attended Southern University, Greensboro, Alabama (a predecessor of Birmingham-Southern College), and Vanderbilt University in Nashville, but received no undergraduate degree. He received the Doctor of Medicine degree from the University of Louisiana (now Tulane University) in 1884, and was licensed to practice medicine in Alabama that same year. According to his obituary in the *Demopolis Times* (August 16, 1917), he practiced in Coatopa and Uniontown before coming to Demopolis in 1887. (Copies of both these communications are bound along with the manuscript of the diaries.) Fig. 1 is a photograph of Dr. Hand.

The diary entries are generally matters of fact; Dr. Hand rarely expressed emotion in his diaries. He almost always commented on the weather. Many of the entries leave the reader wondering what the rest of the story could have been: (Tuesday, March 18, 1913) "This is a beautiful day. Joe Gillespie came over, took dinner with us, and killed our old gray cat." Many of the entries reflect a sense of humor:

(Wednesday, January 14, 1914) "Weather fine.

"Mrs. Foscue's cow died suddenly in my lot this morning."

"She was brought over to be served, but the bull would not serve her and I suppose she died from heart failure."

A few personal and family notes will give a glimpse into Dr. Hand's family life:

(Dec. 25, 1911) "Clear this morning. Cloudy and rain this afternoon. I got Christmas presents of carving set, 2 cravats, 1/2 doz. 1/2 hose, handkerchief from Mary Armstrong, Bettie Belle Mitchell's picture and some cards. Cora Clanton's baby's cord came off today."

(Cora Clanton was one of his four living daughters. She is identified in the quotation below as "baby." Mattie, Velma, and Hester are the other daughters. He had no sons. Another daughter died very young.)

(May 2, 1916) "Mrs. Foscue had an entertainment at our house and we had the regular old fashion

square dance— music by Victrola."

(Dec 17, 1916) "Heavy rain early this morning. This is my 56th Birthday. Birthday presents: wife gave me a hat; Mattie, 2 night shirts; Velma, 1 night shirt; Baby, box candy; Hester, Homemade candy; Miss Jessie Boo, basket satsuma oranges; Beckie, a tie and tie holder."

Besides practicing medicine, Dr. Hand raised chickens, cattle, cotton and grew pecans. His pecan orchard in Sumter County was owned and tended by his grandson and greatgrandson, Samuel H. Graves and Samuel P.H. Graves (who are uncle and nephew) until very recently.

One of Dr. Hand's hobbies was breeding game chickens. There is no indication that he ever attended cockfights, and the family members say that he did not; as detailed as the diaries are, he probably would have mentioned it if he had. He seems to have raised game chickens just for pleasure. Many notations in the diaries relate to his chickens:

(various dates) "Set my Boone eggs under old White Hornet hen..... I gave Jerri Speed a dark blue and Bart Melton a light blue 1/2 Boven Stag....I brought a Boone Stag & three Boone hens to the hospital....My good hen hatched 10 1/2 Claiborne and 1/2 Gradies...my White Kentucky Dominick came this morning. The cock is fine. Express charges were $ 2.25."

(Tuesday, October 31, 1911) "The Black Belt Fair opened today. I entered a pair of my Cuban Games..." (Friday, November 3, 1911) "...did not get any prize on my chickens as the judges, Dr. Lee and Mr. R.Knox, thought they had to be entered as Pit Games."

(Feb. 24, 1914) "My white Ky. Dom stag came from Kleinsboro of St. Joseph, Mo. Today. He is a beauty & weighs 5# 2oz. Express 96¢. I shipped the old cock back to him & he is going to give me a setting of his first eggs. He gave me the stag."

A very frequent notation concerns Dr. Hand's partner: "Dr. Bailey went hunting today." Dr. Hand was an avid hunter himself. He also liked to trap-shoot with his friends. On one occasion he notes, "I shot as well as anyone."

But on a 1911 hunt he records, "Shot Jas. Howze's 20 gauge Smith and only killed one bird out of 18 shots. Pres killed 18 out of 24 shots. He gave me all his birds."

After one shooting excursion he notes, "Saw a Mr. and Mrs. Topperwin do some fine shooting with rifle, shotgun, and pistol. She was about as good as he. I shot over the trap and made 71 out of 100. Ed Bailey made 75 out of 100."

The cost of living in those days was quite different from today. For example, "Lucy [his wife] bought 100 pounds of sugar from Mayer Bros., price 6 1/2 cents per pound. Bought and paid for 1/2 doz. collars for myself from Mayer Bros." On a trip to Montgomery he notes, "Had to pay fare to Montgomery from Selma which was $1.25. Taxi to Exchange for 25 cents. Took lunch cost $1.00." The next day he records, "Breakfast and tip, 60¢. Porter 10¢. room and phone, $ 3.05." On a trip to New Orleans in May, 1917, he notes:

"I left on the Noon train with L.S. for N. O. to see Dr. Elliot about his condition. I took lunch at the depot in Meridian. Took train for N.O. at 3:10 p.m. and arrived hotel & occupied rooms 654 & 676. Then went to Touro Infirmary."

(Next day) "Still cool. Car fare to Touro & back 10¢, Picture show 40¢. Saw Dr. Matas do a hare lip & other minor operations. Dinner 40¢; car fare 10¢ milk shake 10¢ sharpening razor 15¢."

(Next day) "Breakfast at Thompsons, Canal St. 30¢ ; car fare to Touro, 5¢, ...Hotel bill at Monteleone 2.00; Laundry 90¢."

In a 1915 note he records, "Bought 10 gallons of gasoline at 26¢ per gallon—2.60 cash." In view of these prices it should be noted that he charged 50¢ for an office call, and $2 for a house call.

One note shows that the scientific physician was a bit open to folk medicine, at least with his animals: "My Jersey heifer is sick. Henry says she has Hollow Tail. He cut it open and put salt and black pepper and turpentine on it."

Many notes deal with his livestock: (Monday, April 8, 1912) "Weather is fine. Sold my old Jersey cow (Lass Daisey Dean) to Mr. Williams, our Methodist preacher, for $35 and I am to buy her calf when it comes for $25, whether male or female."

Dr. Hand's interest in world events is evident: (Monday, April 15, 1912) "This has been a bad rainy day. The agent delivered my Rand & McNallys's Atlas today—price $1.95. The great vessel, the Titanic, sunk by an iceberg off the coast of Newfoundland with terrible loss of life, about 1,600 lives lost."

(Friday, May 7, 1915) "The German submarine sank the large Cunard Lines Lusitania about 2 o'clock today. About 1000 lives lost. 188 Americans on board. She sank in from 15 to 30 minutes."

Dr. Hand was a patriot. When the Mexican border dispute erupted in 1916, Dr. Hand records the following sequence:

(June 27) "I offered myself, Dr. Bailey, Miss Mary Armstrong & entire hospital outfit to the U.S. for service in Mexico by wire to the Sangro [sic] hospital in Washington, D.C." (July 29) "Dr. Bailey left on the 12:30 train for Mexico or Ft. Sam Houston. I did not see him off but they said there was a large crowd at the depot." (Apparently the Army accepted only Dr. Bailey).

(July 30) "Hot and dry today. The firm of Hand and Bailey was dissolved yesterday, temporarily, as Dr. Bailey left for the Army on the Mexican

border to be gone an indefinite length of time." (Aug. 9) "Read a letter from Dr. Bailey...." (Aug. 26) "Bought 7 gallons of gasoline from Ed Bailey—some he left at home when he left for the U.S. Army." (Sept 30) "Dr. Bailey and family returned from the Mexican border on the train tonight."

TRANSPORTATION IN DR. HAND'S DAY

In view of the *JAMA* article on the impact of the automobile on medical practice,[2] it is especially interesting to look at Dr. Hand's modes of transportation. An early mention of the automobile is the following entry from March 1911 concerning a trip to Birmingham; "Investigated a number of automobiles, saw Theodore Roosevelt....."

(Next day) "Investigated more autos. My preference so far is the Farenton Columbus."

On Thursday, April 13, 1911, he records," Robert Hudson and myself have the agency for the E.M.F. automobile." The next day, he records, "H.L. Wood, R. P. Knox, Dr. Bailey, and myself each ordered an E. M. F. automobile."

(July 10) "Dr. Bailey's car came today. It was a Franklin no. 20."

(Oct. 11); "Had my speedometer put on today." In the same month he records, "Lattinson traded his horse and surrey to Henry for a Jackson touring car and paid, it is said, $900 difference." Frequently the car could not be used: (Monday, January 15, 1912) "....The streets and roads are so bad we can only get about on foot and horseback. I walked out to B.W. Lumber Co. to see Mrs. H. The night is very cold." On those days, he had to resort to more conventional means of transportation; besides foot and horse, he used the buggy, wagon, train, boat, and in one case (Sat., August 12,1912) he records,

"Mrs. H. at the river bridge had a large girl baby at 12:30 this morning. I went over on the [railroad] hand car with Miss Essie Davis. The baby came before I got there. We returned the next morning."

And the automobile was not the only frustrating mode of transportation, as the following show:

(March 13, 1912) "..we sent her to Eutaw in a six mule wagon. S., Dr. Griffith, Mrs. C., and Mrs. Z. went with her. Coming back, my team refused to pull and I had to hitch a pair of mules to buggy and did not get home til 12 p.m.... ."

(Thursday, January 9, 1913) "...The steamboat (Staples) blew up three miles this side of Bladen Springs and 18 people were killed."

(Thursday, April 17 1913) [While on a train ride] "We had a wreck about 8 miles north of Salisbury—the rear Pullman turned over, wheels sinking in the ground. Partially derailed our car, the next one to the rear. Three cars so badly damaged we had to leave them and get extra sleepers at Greensboro...

"(August 14,1913) "Mrs. Powe's Mare ran away with her today and threw her out of the buggy, but she was not hurt. The buggy was demolished."

Nevertheless, the auto was trouble enough. For example,(various dates) "...I broke another axle...." "Ed Bailey had his tire to explode about a mile in the country...." "I broke the left rear axle to my car in some way. I do not know how it was done."

On a trip to Livingston, about 30 miles,

(Thursday, May 20, 1915) "Left for Livingston in my roadster and went by Moscow. We got to the river in 45 minutes but the banks were so muddy & had no aprons to the flat [sic]. It took us four hours to get across. My cylinders got full of oil & by hard pulling and many stops I got to Livingston about 11:30 a.m. Had my car repaired and filled with oil. Repairs $1.25, oil 90¢. We left Livingston about 4:50 p.m. and got here about 8 p.m. Had a good trip except for the river. The roads were good."

On another trip to Livingston;

(Wednesday, July 28, 1915) "we had a blowout and detained us for about 1/2 hour and did not get to liv. [sic] until about 2 p.m. Had blowout vulcanized on our way back. We had another blowout—detained 1 hour. Got some oil from Sam Eidette and got back home all right."

In January, 1917, Dr. Hand records an automobile accident:

"Warm and cloudy. W. G. Mitchell ran into my car out on Spring Hill road near Manuel Howard's. The lights from our cars blinded us so that we could not see. I had stopped my car, but was in the middle of the road—he being on the right side threw the blame on me. He broke his left front wheel, bent his front axle, his radius rod & Mrs. Mitchell was hurt about the face and nose. Broke my bumper, bent one axle, and bent left fender. Lucy was bruised about head."

In these days of organized emergency medical services, helicopter ambulances, etc., the following note seems almost incredible:

(Sept. 5, 1916) "I went to see Mrs. W. near Eutaw and met Dr. Griffith there and decided to bring her to my hospital. We got a car, a Chalmers from Bob Barnes, and started on the way to Demopolis when Mrs. W. had a convulsion. Gave morphine and veratrum and ether and left there under control. We had a break-down, the hind axle broke at the Dixon place and was brought to town in a Ford. I proceeded to induce abortion and sat up all night with her." (Next day) "I succeeded in delivering Mrs. W. about 4 a.m. of a boy baby about 6 months old. She had no more con-

vulsions but she is very much swollen & urine loaded with albumin....."

In those days automobile travel was very slow. Today it is almost exactly 50 miles from Demopolis to Selma, and takes about one hour to drive; even allowing for the possibility that the roads might have been less direct, the following trip is impressive;

(May 17, 1915) "A beautiful day. Mr. Q.'s little girl, E. stuck the point of a pr. scissors in her right eye and injured the iris. I took her and her mother over to see Kirkpatrick in my car. Got caught in several rains on the way—one very hard one. Left here at 1:50 p.m. and arrived at 6 p.m." (The next day) "This is a bright day, and I left Selma at 10:50 a.m. with Annie B. Patton with me and arrived here with very little trouble at 2:20 p.m. Went 140 miles on 13 gal. gasoline and about 1 1/2 quarts of oil."

(Wed., May 26) "Mr. Q. paid me 5.50 for expenses to Selma in my car with his little girl to see Kirkpatrick when she stuck the scissors in her eye."

Almost 4 hours seems like a long time for a 50-mile trip, but to have made it in a horse and buggy would have required three or four days each way. With all its problems, the auto was an improvement.

That Dr. Hand enjoyed driving is shown by this note from 1915:

"I started to take a trip to Eutaw in a Buick car with Tom Jones of Greensboro & got to above Forkland and found the road so muddy we came back home and got there for dinner. I wanted to try his car over the deep sand bed in high, but it could not pull through...."

And this: "Drove my car on Race Track with Robert Hudson." Dr. Hand was one who enjoyed life's little pleasures, and the excitement of being a pioneer automobile driver was one of them.

In later papers we will look at medicine as it is reflected in the diaries, and at Dr. Hand's notebook or "pearl book" that was kept with the diaries.

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The Retinal Research Team at the Eye Foundation Hospital/UAB

by Sandra Blackwood

The trustees of the Eye Foundation, Inc. and the Eye Foundation Hospital constitute an independent institution, which is associated with the University of Alabama at Birmingham only in research and resident training. Clarence Blair is the Chairman of the Foundation Board. Harold Skalka, M.D., F.A.C.S., is the Chairman of the Department of Ophthalmology, and his offices are in the Eye Foundation Hospital building. With funds raised largely by Alston Callahan, M.D., F.A.C.S., Director of Development, and with the assistance of fellow trustees, the retina research department has been greatly expanded in the last few years.

In this article, the seven prestigious retinal investigators are introduced and short summaries of their research aims are presented. All work toward a better understanding of clinical problems which baffle ophthalmologists, as macular degeneration and diabetic eye disease.

Christine Curcio

Ph.D., Retinal Histologist

The macula is a part of the eye needed for detailed vision, as reading, and its degeneration in older adults is the leading cause of untreatable vision loss in persons over age sixty. Researchers and ophthalmologists are working to learn more about the macula so that we may prevent or modify this devastating affliction of older people. Working in the Allan McDonald Laboratory in the Eye Foundation Hospital, Christine Curcio, Ph.D. has spent four years teaching and advising the scientific world about changes that occur in the maculas of older people with healthy eyes and people with age-related macular degeneration. For six years previously, she studied basic anatomy of nerve cells in the human retina at the University of Washington in Seattle.

After light stimuli are received by the photoreceptors of the retina (the well-known rods and cones), they are transferred through the bipolar cells to the next layer, the ganglion cells, by electrical and chemical impulses on their almost instantaneous, but very long journey to the cerebral (brain) cells. It has long been known that the cones function best in bright light and record color, while the rods function best in reduced light and record form, shape, and movement. Dr. Curcio has discovered, contrary to what had been previously believed, that in age-related macular degeneration, the cones outlast the rods and as the rods atrophy, the cones become packed together. She has also discovered possible similarities between retinal degeneration and retinitis pigmentosa, a genetic condition.

At the Eye Foundation Hospital, she is fortunate in having two great assets: (1) the Alabama Eye Bank, the second largest in the United States, which provides her with an ample supply of human retinas. With the help of practicing ophthalmologists, she is educating patients with age-related macular degeneration that their eyes can be donated for research through the Eye Bank.

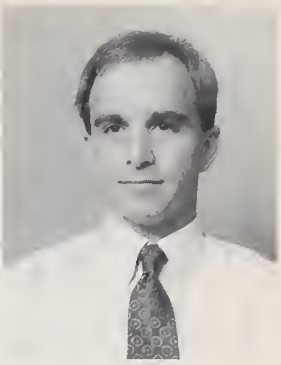
(2) Each year in the operating rooms of the Eye Foundation Hospital and University Hospital, about a dozen eyes must be removed from patients because of surrounding malignant growths. These eyes may have normal vision, yet they must be removed because of the cancer cells surrounding them.

Prior to surgery, these patients have eye examinations at the Eye Foundation Hospital by Cynthia Owsley, Ph.D., an Eye Foundation/UAB psychophysicist. After surgery, the removed eye is quickly transported to Dr. Curcio's laboratory for histological analysis. This unique collaboration will allow Dr. Curcio and Dr. Owsley to learn what structural changes in the retina are associated with different levels of visual function in older adults.

This is the first time in scientific history that such a collaboration has been achieved.

Ramon Cacheux
Ph.D., Cellular Neurobiologist

Clyde Guidry
Ph.D., Cell Biologist



Excessive scar tissue formation in the vitreous is a major cause of visual loss and diseases as diabetic retinopathy and retinal detachment.

The technique under development by Clyde Guidry, Ph.D., and Ramon Dacheux, Ph.D., called photodynamic ablation therapy, is designed to eradicate scar-forming cells without harming the retina. The technique involves the injection of a specific light-sensitive dye into the eye which is taken up rapidly by the scar-forming cells, but slowly, or not at all, by the other retinal cells. Exposing the dye-filled cells to the correct wavelength of light will kill them, but not harm the structures that do not contain the light-sensitive dye.

This approach has great promise, but there are problems yet to be solved. The initial studies of this technique involved photoablation of cells in culture. With these studies the amount of dye, speed of loading, light intensity, and duration of exposure were established. Now, the researchers use an animal model of PVR (proliferative vitreoretinopathy), in which 100,000 actively dividing cells are painlessly injected into the eye of a rabbit and allowed to grow. Within a week, a fibrous scar is formed that would soon detach the retina. The parameters (intensity of light and duration of exposure) found effective to photoablate the cells in culture are being used on the PVR induced in rabbit eyes.

The scientists have also encountered problems involving optics and getting the appropriate distribution or dispersion of light into the eye. Light penetrating the eye is normally focused into a relatively small spot on the retina where visual acuity is highest. For the photodynamic ablation to be effective, the light needs to be uniformly distributed throughout the eye. This technique will require the use of corrective lenses during photoablation to overcome this focusing effect, which they are now endeavoring to perfect.

Ultimately, the technique will involve injecting the dye into a patient's eye under a local anesthetic. After allowing about an hour for the dye to be absorbed by the cells, a blue light of a certain wavelength will be flashed into the eye's interior. The dye-filled cells will die, the retina will not become detached, and no further surgical procedure should be needed.

These two researchers credit Eye Foundation/UAB ophthalmic surgeons Richard Feist, M.D., and Milton White, M.D., with encouraging their project. These two physicians have had considerable exposure to basic science research during their clinical training and are enthusiastic about this innovation. They have provided vitreous samples and important input to Drs. Guidry and Dacheux regarding certain surgical techniques and clinical complications of PVR patient care. Also, they have agreed to carry out the human clinical trials when this study gets to that stage.

Dr. Dacheux's studies, currently funded by the National Eye Institute of the National Institutes of Health, address the structural and functional features of the connections between the neurons of the retina. He has characterized many of the cells in the network that facilitate vision at low light levels. His laboratory is one of the few in the United States that is successfully performing electron microscopy on physiologically identified neurons in a mammalian retina.

Dr. Dacheux received his Ph.D., in physiology from the State University of New York at Buffalo. He spent two years as a post doctoral fellow at Harvard Medical School to learn electron microscopy. Before coming to the Ophthalmology Department at the Eye Foundation Hospital in 1992, Dr. Dacheux spent fifteen years as a faculty member in the Department of Anatomy and Cellular Biology at Harvard Medical School. He is presently a recipient of the Research to Prevent Blindness, Inc. Jules and Doris Stein Professorship, which is awarded to encourage the finest basic scientists to become involved in clinical problems.

After completing his graduate studies at the University of Texas Southwestern Medical Center in Dallas, Texas in 1986, Dr. Guidry moved to the University of Alabama at Birmingham Department of Biochemistry. He has since joined the UAB Department of Ophthalmology at the Eye Foundation Hospital as an Assistant Professor and conducts extensive studies on proliferative vitreoretinopathy (PVR).

Dr. Guidry's approach to PVR involves three lines of investigation, each based in principles learned from his earlier studies of wound contraction. The first is to identify the retinal cell type capable of the contraction which causes retinal detachment. The second stage is to identify the contraction-stimulating protein active in PVR, and the third stage is to extend the understanding of the mechanism through which different contraction promoters stimulate the cells to contract. Together, the information from these studies will allow specific cells, proteins, and stimulatory pathways to be targeted in inhibition studies. This will allow for the identification of drugs to prevent cell contraction - drugs useful not only to surgeons trying to correct retinal detachment, but hopefully to prevent PVR before it occurs.

Charles Hardwick
Ph.D., Molecular Cell Biologist

In 1992, Charles Hardwick, Ph.D., initiated a collaborative study involving Robert Morris, M.D., and C. Douglas Witherspoon, M.D., at the Eye Foundation Hospital, to investigate the vitreous fluids from pathologic eyes for potential sources of contraction-stimulating activity. Since then, he has received over 200 samples removed from patients undergoing surgery in the treatment of diabetic complications, trauma, and proliferative retinal disease.

Using a tissue culture model which mimics one aspect of the destructive activity that occurs in proliferative eye disease, that is, the contraction and reorganization of extracellular matrix, he has found that the level of contraction-stimulating activity in pathologic vitreous generally correlates with the severity of clinical diagnosis by the operating surgeons.

In the summer of 1994, Dr. Hardwick increased his collaborative efforts to include Milton White, M.D., and Richard Feist, M.D., also of the Eye Foundation Hospital, in order to expand the scope of his studies into the growth factors stimulating the contraction activity found in the vitreous samples. The known factors capable of stimulating the contraction in his tissue culture model that may be involved in eye disease include platelet derived growth factor, transforming growth factor beta, and insulin-like growth factor. Dr. Hardwick also plans to explore the secretory products of the cells thought to be involved in proliferative eye disease, including retinal vascular endothelial cells, retinal pigmented epithelial cells, fibroblasts from choroid, and Muller cells. The long-term goals of these studies are to identify and quantify the predominant growth factors found in the vitreous of diseased eyes, to identify the potential sources of these growth factors, as secretory products or vitreous hemorrhage, and potentially identify pathways inhibiting the actions of the growth factors to prevent or allay future complications in these patients.

Timothy Kraft, *Ph.D.*
Electrophysiologist

The ultimate aim of Dr. Kraft's research is to understand how and why some nerve cells in the eye stop functioning and degenerate in certain eye diseases. His research background, extending over seventeen years, has focused on the study of healthy tissues, but now he is turning his attention to the investigation of eye disease as well. At the University of Minnesota, Dr. Kraft worked on arterial perfusion of donor eyes which temporarily sustained human retinal activity for functional testing, and at Stanford University he and his associates made the first recordings from individual human photoreceptors. He proved that human color sensitivity depends on the color sensitivity of the cone photoreceptors, as well as the filtering of light by the crystalline lens and cornea.

Color vision defects can be, and probably are, early indications of retinal damage in patients with glaucoma, ocular hypertension, and diabetes. The loss of sensitivity to blue light in these different diseases points to a special subset of nerve cells which carry the signal for blue light. Dr. Kraft is investigating blue sensitive cone photoreceptors to learn if they are selectively destroyed in patients with glaucoma. If we know exactly which cells are first damaged by glaucoma or other diseases, very specific tests may be designed to observe the function and health of these cells. This work was initiated with the support of the Foundation for Glaucoma Research (San Francisco) and continues because of private donations in Birmingham.

To study the workings of normal color vision, Dr. Kraft uses the retinas of chipmunks because they consist mostly of cones for daytime vision. Chipmunks cannot see well at night, as their retinas have very few rods. Unlike humans, chipmunks have only two types of receptors to see color: a blue-sensitive cone and a green-sensitive cone. This simplification will make it easier to learn about how color signals are generated in the retina.

Humans have trichromatic color vision; that is, they have three separate types of color sensitive cells: blue, green, and red-sensitive cones. The brain computes color by comparing the relative excitation of the three types of cones. Dr. Kraft is currently studying the practical implications of genetic variability of cone pigments and color vision in humans. The retinas of human eyes, supplied by the Alabama Eye Bank, are an invaluable resource for Dr. Kraft's work and that of several other members of the retinal research team at the Eye Foundation Hospital.

Another clinical problem being addressed on the research level in Dr. Kraft's laboratory is that of retinal degeneration and photoreceptor cell death. Christine Curcio, Ph.D., a retinal histologist at the Eye Foundation Hospital, has discovered that about 30% of rod photoreceptors in the central portion of the eye have died by the age of 80. In animal and human dis-

eases, early and rapid photoreceptor degeneration of the rods can cause significant night blindness. In some cases, loss of the rods will also cause death of the cone photoreceptors, resulting in complete blindness. In animal models, many different growth factors, or neurotophins, have been found to temporarily rescue photoreceptors when injected into the eye. Dr. Kraft's lab has developed a culture technique to study the survival of single rod cells from rat or human donor retinas. This new assay will allow very rapid testing of many different kinds of drug treatments meant to determine which critical elements are needed for cell survival.

Although in its early stages, this work has already shown that different compounds will effect changes in tissue survival depending on the age and/or species.

Dr. Kraft received his bachelor's degree in Life Sciences from the Massachusetts Institute of Technology, his Ph.D. in Physiology from the University of Minnesota. He was a Fellow in Neurobiology at Stanford University for several years and a post-doctoral fellow in the ophthalmology department at the University of California at San

Dr. Kraft's work is supported by the NIH in Bethesda, Maryland, and Research to Prevent Blindness, Inc. in New York.

Cynthia Owsley
Ph.D., Psychophysicist

Underlying all of Dr. Cynthia Owsley's extensive research of more than a decade is her desire to help people, especially older people, see better and enjoy their lives more. Because she has been in the forefront of discovering how our vision is affected as we grow older, she is widely quoted in the press and invited to speak throughout the United States and the world. Many of her articles have been published in scientific journals and lay magazines.

She is a psychophysicist; this means that she studies how much and what kind of light and patterns are needed for the human eye to see. Visual psychophysicists study one's impressions and responses (psycho) to light (physics).

Dr. Owsley documents visual impairments using psychophysical methods. She determines if a patient has visual problems, and if so, their nature and severity. In aging visual systems, she discovers whether the basis is optical (in the eye) or neurological (in the neural retina and brain centers). One of the most important tests is contrast sensitivity, which means how well the retina and brain can distinguish contrasting differences in light and dark patterns. Usually, but not always, the brighter the light, the more details that can be seen. She measures how poorer lighting results in less vision in elderly people than in young people. Even the taking of her peripheral field tests may enhance a person's understanding of the importance of paying attention to objects seen in the periphery of one's vision.

Dr. Owsley found that one of her tests of attention and perception called the Useful Field of View (UFOV), is a strong predictor of auto accidents among older drivers. Older drivers who failed the test were sixteen times more likely to have an accident in the next three years. Her colleague, Karlene Ball, Ph.D. has shown that visual training can expand the UFOV, and they are now examining whether this enhances safe driving.

[In Alabama a crying need is the requirement of periodic vision screening for the continuation of drivers' licenses. Almost every Alabama ophthalmologist and optometrist knows of drivers whose vision is much less than that originally required for their driver's license. At present, the only control over older drivers is the annual renewal of their automobile liability insurance, which does stop those people whose vision is lower than required from driving. It will take a few more terrible deaths, possibly of some lawmaker's family, to motivate the passing of a bill that would require an annual eye examination for the continuance of a driver's license.]

Dr. Owsley and her associates have tested the vision of patients who have been involved in traffic accidents, and invited them to come to her office for eye tests. This moves her investigations from purely theoretical to actually hands-on grasping of the problem. Good driving requires good sight, good thinking, and good cerebral-muscular coordination (swerving the car to miss a child who has run out on the street). She is now evaluating the improvement patients have when their cataracts are removed and she is endeavoring to prove that through a laboratory training program of developing the peripheral visual field, a vehicle accident is less likely to occur.

Recently, Dr. Owsley, with the help of Beverly B. Bishop, M.D., and R. Mitchell Neuman, M.D., clinical residents at the Eye Foundation Hospital, clarified an important unknown about visual problems in Alzheimer's disease. It has been widely assumed that the poor visual function in these patients was due to retinal malfunction due to Alzheimer's disease. Studying the vision of thirty patients, as diagnosed and documented in UAB's Alzheimer's Clinic, and using as controls 29 normal patients with the same median age of seventy, they demonstrated that the retinas of

patients with Alzheimer's disease were as efficient as the retinas of normal patients, and that the poorer verbal responses to visual tests in Alzheimer's disease is due to malfunction of the higher centers of the cerebral neural cells.

Mapping of the peripheral visual fields is a most important and frequently used fundamental diagnostic test in ophthalmology. Field defects, i.e., deficient areas in peripheral vision, may lead to the diagnosis of glaucoma, brain tumor, or the location of cerebrovascular accidents. Now, with the help of G. Jackson, M. Sloane, Ph.D., and an ingenious modification of the daytime visual field testing device, Dr. Owsley has charted peripheral fields in the dark. It was not a surprise that the vision of both eyes together have better night vision than each separately, but it was unexpected to find that at night the upper fields have better vision than the lower.

The importance of Dr. Owsley's investigations can be understood by reading the list of her supporters; National Institute on Aging, National Eye Institute, AARP Andrus Foundation, Helen Keller Eye Research Foundation, and the Rich Retinal Research Fund. Dr. Owsley is a past member of the Visual Sciences B-Study Section NIH (1990-94), is program chair of the Basic Research Subcommittee on Older Drivers at the National Research Council's Transportation Research Board, and is on the executive committee in charge of activities at the UAB Center for Aging.

Shu-Zhen Wang, *Ph.D.*
Molecular Biologist

There is an inheritance factor in the development of macular degeneration which is nondominant and elusive. A genetic approach toward understanding this condition is quite in order, and to accomplish this, with the financial support of Mrs. David (Loris) Rich, we have added to our research faculty, Shu-Zhen Wang, Ph.D., an experienced molecular biologist. Using mice as animal models, she is increasing our understanding of the embryological mechanisms underlying early retinal development. She studies these mouse genes, the substances that regulate them, and the changes in their expression patterns during the formation of the retina. The development of the retina consists of cell proliferation and cell differentiation, a process in which multipotent cells choose particular paths and become very specialized so that each will be able to perform a unique task in the visual process.

Dr. Wang's goal is to identify the gene or genes involved in triggering cells to stop proliferating and to commit themselves to certain specialized cell types. If we can understand the control of this developmental transition, we may be able to design a strategy to transplant cultured cells into the eye to replace diseased retina, and thus restore vision. She has now identified four genes that give signals toward the formation of the retina, and is hopeful that she can advance our understanding of how the retina is formed. In other areas, as in retinoblastoma where cell proliferation is out of control, she will explore which genes besides the RB gene itself have mutated and which have changed expression patterns.

Prior to joining the research faculty at the Eye Foundation Hospital, Dr. Wang spent four years at the Johns Hopkins Medical School working with Drs. Ruben Adler and Jeremy Nathans on the molecular biology of visual pigment and genes involved in early retinal development. Dr. Wang describes her four years at the Wilmer Eye Institute as "enlightening," and says she has fallen in love with vision science.

Dr. Wang is a highly regarded young scientist with her Ph.D. in Molecular Genetics from Virginia Tech, Blacksburg, Virginia. Born and raised in China, Dr. Wang came to the United States in 1982 to pursue higher education and begin her efforts toward scientific discovery.

The Alabama Medicaid DUR Program

Jeff Guo, M.S., Auburn University School of Pharmacy
J. Tryone Gibson, Ph.D., Auburn University School of Pharmacy
Wilson O. Allen, M.S., Alabama Pharmacy Association

INTRODUCTION

A cooperative agreement was established by the Alabama Medicaid Agency with the Auburn University School of Pharmacy and the Alabama Pharmacy Association in 1992 to administer a statewide Drug Utilization Review (DUR) Program. The framework of this cooperative program was designed to comply with certain requirements of the Omnibus Budget Reconciliation Act of 1990 (OBRA '90). The DUR Therapeutic Board and the DUR Committee, the two working committees of the Alabama Medicaid DUR Program, were formed to develop drug use criteria and to conduct routine reviews of Medicaid recipients' prescription data.

Information regarding prescriptions filled for Medicaid recipients is stored in the Alabama Medicaid drug information database as claims are submitted by providers. The criteria established by the DUR Therapeutic Board are then used in screening the recipients' profiles. When a potential drug use concern is identified, a report of the recipient's prescription claims data is generated by computer. Reports of identified drug use concerns are then reviewed by the DUR Committee to determine if communication with Medicaid providers is needed.

Letters describing the identified drug use concern(s) are sent to physician and pharmacy providers under the signature of a member of the DUR Committee when interventions are warranted by criteria standards. Providers are also supplied with a copy of the computer generated patient profile in question, a DUR Program comment form, and a return mail envelope so providers can easily supply feedback to the DUR Committee.

Significant dollars are spent annually by Alabama Medicaid for the supply of anti-ulcer agents to recipients. Therefore, the DUR Therapeutic Board established criteria for histamine H2 antagonists and other anti-ulcer drugs as an early effort in the Alabama Medicaid DUR Program. The identified drugs are frequently prescribed in the ambulatory setting and the DUR Committee found that the criteria established for anti-ulcer medications accounted for 92.44% of the cases identified for interventions.[1]

METHODS AND DATA SOURCES

Which drugs are prescribed, their costs, and how effectively these agents are used are extremely important issues in administering a health care program. Therefore, the prescribing and use of drugs have both clinical and financial significance to administrators of the Alabama Medicaid Program. What effects, if any, were interventions conducted by the DUR Committee having with the drug prescribers for Alabama Medicaid recipients? Specifically, what effect was being produced in the area for which drug use concerns were being identified most often by the DUR Committee? In order to answer these questions, six of the most frequently prescribed anti-ulcer drugs were identified for analysis. Target drugs selected were cimetidine, famotidine, nizalidine, omeprazole, ranitidine, and sucralfate.

Using guidelines adopted by the Health Care Financing Administration (HCFA)[2], a study of drug prescribers was conducted recently to estimate the total cost savings resulting from the Alabama Medicaid DUR Program. Two groups of prescribers were used for this comparison. Whether or not prescribers had received DUR letters during the study period determined the group to which a prescriber was assigned. Those receiving DUR letters were assigned to the DUR intervention group (DUR group) while those receiving no letter became the comparison group. The comparison group was used to control the periodic variations in DUR performance.

Population and Target Population

The population of this study was all Alabama Medicaid prescribers (both in-state and out-of-state). There were 22,431 prescribers as of October, 19-94, as indicated by the existence of their license numbers in the Alabama Medicaid database. The target population was all prescribers of any target drug during the study period. These prescribers had to have prescribed at least one of the target drugs during the one-year period from October 1, 1993 through September 30, 1994, for which it was possible to retrieve the claims data from the Alabama Medicaid database. This procedure eliminated all but 6,790 prescribers (see Figure 1).

Figure 1. DataFlow for Estimating the Cost Savings of the Alabama Medicaid DUR Program

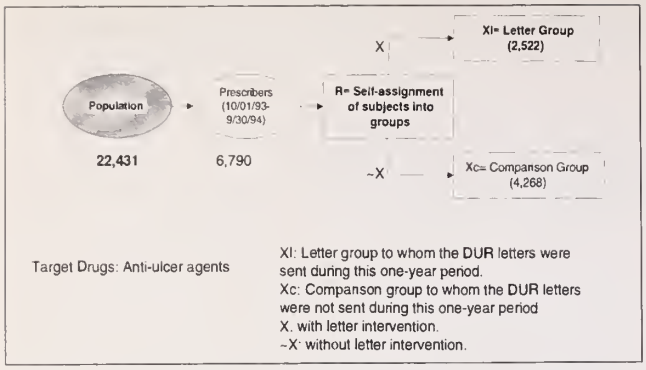


Table 1. Estimated FY94 Annual Savings Summary

Month	$ Increase per prsb. (Comp. group)	$ Decrease per prsb. (DUR group)	$SavPP	$ Savings for DUR group
10/93	7.55	6.01	13.56	34,198.32
11/93	20.28	-12.31	7.97	20,100.34
12/93	25.39	16.72	9.67	24,387.74
01/94	22.08	6.75	28.83	72,709.26
02/94	32.93	28.35	61.28	154,548.16
03/94	37.61	35.91	73.52	185,417.44
04/94	42.57	24.27	66.84	168,570.48
05/94	41.54	0.34	41.88	105,621.36
06/94	43.29	24.37	67.66	170,638.52
07/94	40.67	58.35	99.02	249,728.44
08/94	46.74	- 1.54	45.20	113,994.40
09/94	44.25	5.06	49.31	124,359.82
Total Cost Savings				1,424,174.28

DUR Intervention Group and Comparison Group

The DUR group was comprised of all prescribers to whom the DUR letters were sent during the most recently completed fiscal year (October, 1993 through September, 1994). There were 2,522 prescribers in the DUR group. The comparison group was all prescribers to whom no DUR letters were sent during this same time period. There were 4,268 prescribers in the comparison group.

Data Collection Method

There were two data sources for this savings estimate. The first was the computerized Medicaid management database which included a record of all prescriptions reimbursed under this program (approximately 20 million prescriptions). Each record identified the: Medicaid recipient, dispensing pharmacy, date of service, number of units dispensed, drug NDC code, prescriber, days of drug supply, dollar amount of claim charge, dollar amount reimbursed, and setting (e.g., out-patient or nursing home).

The second data source used in this study was the DUR letter intervention management database which included a record of all Alabama Medicaid DUR letter interventions. Each record included the: case number, dispenser provider number, prescriber license number, date the DUR letter was sent, date a response to a DUR letter was received, date of case closing, status of case (open, closed, or other), potential problem identified, address of the dispenser, address of the prescriber, and name of the Medicaid recipient identified in the case.

ESTIMATED COST SAVINGS OF THE DUR PROGRAM

Savings were defined as the drug expenditure decreases resulting from DUR letter interventions. Savings were estimated by comparing the pre- to post-intervention changes in total drug reimbursement costs between the prescriber study group and the comparison group.[3]

The dollar amount of increase per prescriber ($ icrease/prsb.) was determined from the drug reimbursement per prescriber per month during two subsequent fiscal year periods for Alabama Medicaid. The dollar amount for the time period of October, 1992 through September 1993 was subtracted from the corresponding amount determined for October 1993 through September 1994. The resulting figure was the dollar increase for drug expenditures per prescriber per month for the comparison group. The same methodology and time periods were also utilized in determining the dollar amount of decrease per prescriber ($ decrease/prsb.) per month for the DUR group (see Table 1).

The dollar amount of savings per prescriber ($SavPP) per month is equal to the increase per prescriber ($ increase/prsb.) per month in the comparison group plus the decrease per prescriber ($ decrease/prsb.) per month for the DUR group. These figures were then multiplied by the 2,522 prescribers to determine the total dollar savings per month for the DUR group. Total cost savings for the DUR group were determined by adding the twelve monthly DUR group savings amounts (see Table 1).

The overall cost of operating the Alabama Medicaid DUR Program was $275,000 per year.4 This amount included DUR computer programming and operation, administrative activities in conducting the DUR Program, DUR reviews, and intervention activities. When the DUR Program cost of $275,000 is subtracted from the estimated cost savings of $1,424,174, an estimated net savings of $1,149,174 can be attributed to the Alabama Medicaid DUR Program for six anti-ulcer drugs only.

This study demonstrates in part the positive impact that the DUR Program has already had on the Alabama Medicaid program. It is anticipated that a follow-up study can be conducted at the end of the current fiscal year for further analysis of the DUR Program's effectiveness.

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ALLIANCE:

Usha Bhuta
A-MASA President

A Success Story... WAMASA 1951-61

Little Johnnie was drawing a picture. Mom asked, "What are you drawing?" Johnnie replied, "Picture of God." Mom said, "But no one knows what God looks like." "Yes, they will once I get through," replied Johnnie. Well, I don't think I can draw as good as Johnnie and those who started this organization didn't know what the picture would look like after 70 years. Let's go back to those golden years and see how we progressed and once I get through I promise readers will know all about the ALLIANCE!.

The real name of The Alliance was Woman's Auxiliary. The Medical proffession was mostly owned by men then. Women didn't know about "Burning the Bra movement "and believed in getting all the support. The Woman's Auxiliary Pledge was " Ipledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support Its activities, protect its reputation and ever sustain its high ideals." By 1955 its membership of 4 in nine states grew to a membership of 66,845 in 48 states. Woman's Auxiliary played a major role in the areas of Civil Defense, Nurse Recruitment, Mental Health, Medical Legislation, Red Cross blood drive and Financial aid to Medical education. Alabama had 815 members in 1955.

In 1947 The World Medical Group was organized because an increasing number of problems pertaining to health were being resolved by non-medical bodies. The aims of World Medical Association were to raise medical education standards over the world, the raising of world public health levels; and improving of industrial and occupation health programs. In 1955 W.M.A. extended an invitation to Woman's Auxlliary to participate with them. Dr. Louis Bauer, former A.M.A. President and then W.M.A. Secretary General said:"... we have not sought the support of Woman's Auxillary for W. M. A. work primarily because we have, as an organization, been in the embryo stage. That the assistance of interested doctors' wives worklng directly with their auxiliaries, will be invaluable to reaching W. M. A. goals; there is no question. We have recognized from the start that we needed them, and I believe now is the time to ask for their aid. Many women have felt slighted in the past because we did not include them in the program. If our new membership drives in connection with the Auxiliaries are successful, we may be able to form an Auxiliary for the United States Committee. Doctors' wives, like doctors themselves speak a universal language and have common goals."

In 1952 the President of Woman's Auxiliary to the A.M.A., Mrs Eusden, stressed the responsibility of the auxlliary in letting the doctors' voices be heard, reporting their accomplishments, their views, their aims. It was realized then that national opinion toward medical care is the sum total of public attitude in local communities. Each auxilian has a burden of molding the right attitude in local communities. In those years the A. M. A. was forced to fight to mantain a free profession. This included the danger of domination of our medical schools by the govern-

ment. To offset this threat the A.M.A. Education fund was established and the tradltion is still going on in the name of American Medical Association Education Relief Fund.

In 1958 the woman's Auxlliary to the Student American Medical Association was formed. The first in Alabama was formed in Medical College of Birmingham with the help of Woman's Auxiliary. The purpose of this organization was to acquaint the wives of medical students with the profession of medicine: its aims, purposes and ideals, its various organizations and Auxiliaries to prepare them to take their position and responsbilities as doctos' wives in the communities where they may eventually settle. In 1960 The Student American Medical Association voted to sponsor and give P.H.T. (Putting your Husband Through) diplomas to all senior medical students' wives as a token for their services in helping their husbands.

In 1960 Woman's Auxiliary formed a committee on Civil Defense. Members were encouraged to attend local and state meetings on the " Five steps to Safety", that spell out standard procedures to meet any attack. The Five steps were:

1. Warning signals and what they mean
2. Your community plan for Emergency Action
3. Protection from Radioactive Fallout.
4. First aid and home emergency preparedness.
5. Use of CONELRAD – 640 or 1240 for Directions.

An ad to recruit new members came in **WAMASA NEWS** in December, 1960 with the Title:

WOMEN WANTED – *Average Doctor's wife, experience unnecessary, model citizen, and anxious to serve ln the Woman's Auxillary to the Medical Association of the State of Alabama. Must be willing to learn the facets of the Auxiliary through the medium of service in health education. Must be desirous of working well, both independently and on a group basis. Our projects are complete, offering unlimited personal satisfaction.*

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To be continued.....

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Style: The first page should list title (please be brief), the author (or authors), degrees, and any institutional or other credits. Bibliographies must contain, in the order given: Name of author, title of article, name of periodicals with volume, page, month – day of month if weekly – and year. Number should be limited to absolute minimum. References should be numbered consecutively in order in which they appear in the text.

The Stylebook/Editorial Manual, published by the AMA, is the general reference for questions of style. It is particularly useful in the proper presentation of data. When conflicts occur between usage, etc., by an author and the stylebook, these will be resolved in favor of the author if his method is persuasive and logical.

Helpful to many writers is *The Elements of Style* by William Strunk, Jr., and E.B. White, which emphasizes brevity, vigor and clarity.

Final authority on grammar is Webster's *New International,* Unabridged, Second Edition.

Length of Articles: Articles should not exceed 3,000 words (approximately 3-4 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

Illustrations: Illustrations should be numbered consecutively and indicated in the text. The number, indication of the top, and the author's name should be attached to the back of each illustration. Legend should be typed, numbered, and attached to each illustration. Photographs should be clear and distinct; drawings should be made in black ink on white paper. For photographs, glossy prints are preferred.

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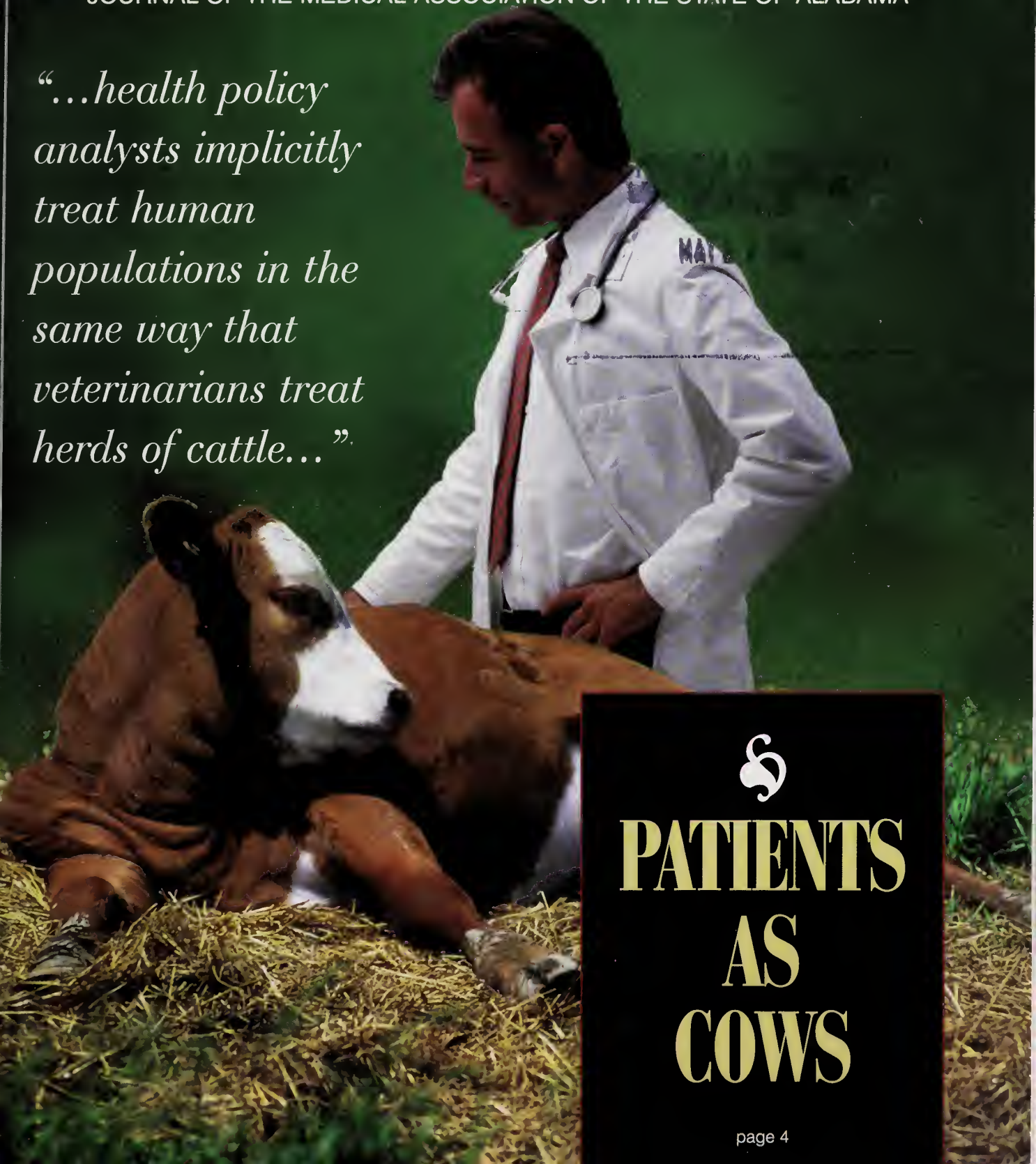
"...health policy analysts implicitly treat human populations in the same way that veterinarians treat herds of cattle..."



PATIENTS AS COWS

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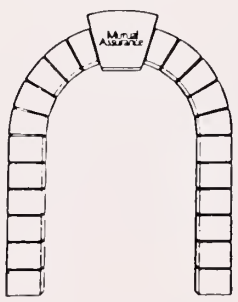

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EXECUTIVE DIRECTOR

S. Lon Conner
Executive Director, MASA

The Great Equalizer

Acutely mindful of the many new forces pushing and pulling medical practice, the Board of Censors has for the past year been involved in an intense, ongoing discussion of assisting Alabama doctors in meeting these challenges.

Physicians are a peculiar breed of citizen. Most are fiercely independent and reject any attempt at paternalism of the kind that overloads them with advice on what course they should plot. Their individualism dictates that they will decide that for themselves.

Given that premise, the Board's thinking has been in the direction of enhancing the information doctors need for decision-making in the current environment, wherein change is the only constant.

Some economists say the present rush to managed care cannot be regarded as the final stage in the reshaping of medical practice. These pundits believe the country may be heading toward a system of health care that is as different from the present instability as the present is from traditional fee for service. But all agree that the sometimes ruthless processes of evolution will continue for some time.

Early in the year, a comprehensive survey was taken of the MASA membership to provide a detailed picture of your needs. A common thread running through your responses was the demand for more information about managed care. The MASA office in Montgomery has already produced managed care workshops and prepared a reference list of publications on the subject.

The Board is also investigating the resources of the Internet as a tool for Alabama doctors as they set their sails for the demands of the 21st Century just ahead. It is my expectation that in the not distant future MASA will provide a gateway to the Internet and to that resource-rich portion of it known as the World Wide Web. Electronically linking all the physicians in Alabama to this virtually infinite body of knowledge is a major objective in itself, but a priceless dividend of that would come with the linking of you to each other and to the Board of Censors.

Computer power is doubling every 18 months, which translates into speed and ease of use. You don't have to be a computer nerd to "point and click" on the graphic interfaces of the Web. The speed and ease of modern networking owe much to the fantastic evolution of the desktop computer but also to the "hyper text mark-up language" (HTML) developed by CERN, the European Laboratory for Particle Physics, which put the final touches on work done earlier by Americans.

HTML made the Web possible and also facilitated simpler navigation through the vast world of information linked by the Internet, bringing closer to reality the ancient dream of merging all human knowledge in a single depository. Just about anything you may want to know can now be accessed by the use of a mouse pointer (with virtually no typing required).

The Internet has been likened by some to what the six=shooter became in the Old West – the Great Equalizer.

Watch The Alabama M.D. for announcements on this project, one of several the Board is considering to assist Alabama doctors in constructing their own level playing field.

PRESIDENT'S PAGE

Thomas Stamp, M.D.
President, MASA

Which System Needs Reform?

For the past two to three years we have been bombarded with "health care reform." Mostly coming from our President and his wife, "both attorneys." They, and many others insisted we reform the best health care system in the world. A system that has, and is, contributing so much to our people.

Contrast, if you will, the health care system to the legal system.

As a youngster, I was taught that our legal system was the best in the world, that our system was designed by a set of laws to maintain order, determine the truth and to administer justice.

It surely must be obvious to most of us that order, truth and justice, if it occurs, is incidental or accidental. Surely not a product of the system. It, "the legal system," consumes more and more of our time and resources, both public and private, and contributes very little, if anything, to the common good. Our present system is a game in which lawyers compete with each other. It is a game where winning is the goal. It is a game where rules of evidence are more important than truth and where justice is an idea of the past, where the rights of victims of violence and theft must never interfere with the rights of the criminal. It is a game where we are all put on trial for the crimes of one. It is a system where honor and honesty, logic and common sense, integrity and commitment to fair play, are all made useless and thrown away in favor of "rule of law." It is a system that takes our best attributes and characteristics and says they are not important. It is a system that works only for those inside the system. It is a system that takes so much from us all (increased insurance premiums, increased taxes, increased product costs, increased red tape and paperwork, increased costs of all services).

The present system does not maintain order, it does not seek the truth, and it surely is not a place where one goes to find justice.

If one needs more proof that our legal system is bankrupt, the O.J. Simpson trial surely has demonstrated it very adequately. This one case should inspire us all to demand a change in the legal system from every legislative body (yes, I know, those bodies are mostly attorneys).

Our system (laws and courts) are making life more difficult, more complicated, more confusing, more aggravating, and consuming a much greater portion of our resources. What is it doing for us?

Why shouldn't we, citizens of this country, expect our legal system to be a place where order is kept, respect for truth is more important than a few rules of evidence, where we could expect to find justice when we are wronged?

Which system needs reforming?

Why Some Health Policies Don't Make Sense at the Bedside

*David A. Asch, MD, MBA; and John C. Hershey, Ph.D**

■ **Cost-effectiveness analysis and other forms of decision analysis are becoming more common in the medical literature and are increasingly influential in the development of health policy. Nevertheless, many clinicians find it difficult to apply policies developed from these analyses to individual encounters with patients. We examine the assumptions behind these analyses and argue that the perspective they embody can make clinical strategies appear to be less risky in theory than they are at the bedside. We believe that this problem underlies the intuitive concern many physicians have about policy analyses and calls into question the value of these analyses in shaping clinical practice. These analyses aggregate the benefits and burdens of alternative interventions across different individual persons. Thus, overall population risk appears blunted, as it would in a diversified portfolio of stocks that react differently to financial forces or in a herd of cattle that react differently to veterinary interventions. The assumptions behind these analyses make sense if aggregate outcome is what matters, but not if one cares about each individual investment or animal. Because such aggregation tends to understate individual risk, when applied to human health policy, it may misrepresent the interests of patients and cannot be assumed to provide useful guidelines for decision making at the bedside.**

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When cost-effectiveness analysis, decision analysis, and other forms of health policy analysis were first introduced as tools for clinical decision making, some physicians complained that the quantification the analyses required was artificial, simplistic. and dehumanizing[1-4]. Perhaps some of these concerns have been overcome, because these analyses are becoming more common in the medical literature and are increasingly influential in the development of health policy and clinical guidelines. Nevertheless, many clinicians find these analyses difficult to apply during individual encounters with patients.

Concerns about these analyses take many forms. One common concern stems from the recognition that patients can vary widely in their preferences, and, thus, that analyses using an average set of goals may not represent the interests of all patients. Another concern is that analyses that include monetary inputs, such as cost-effectiveness analyses, are difficult to apply to individual patients, who usually face a personal cost that differs from the cost used for the analysis. A third concern is that the interests of society are often distinct from those of individual patients and, thus, that some policies developed to further societal goals can seem ill-suited to some patients' interests.

These limitations of policy analysis arc, in general, well understood. In this paper, however. we discuss a fourth, more subtle, interpretation of clinicians' concerns. Medical decisions appear to be less risky from the perspective taken in a policy analysis than they do from the perspective taken by physicians, patients, and other decision makers who must apply policy at an individual level. Even if all patients have similar values and preferences, the individual effect of costs can be adequately measured, and the goals of society are aligned with those of individual persons, policy analyses can inadequately reflect the risks faced by individual patients. This is because policy analyses focus on the outcomes of groups rather than on the outcomes of individual persons. Because clinicians treat patients one at a time, this difference in perspective can make the results of policy analyses difficult to apply and may explain the gap sometimes seen between health policy and clinical practice.

We believe that this problem helps to explain the intuitive concern that many physicians have about policy analyses, and that it calls into question the value of these analyses in shaping clinical practice. Although there has been some discussion in the medical literature of differences between individual and group perspectives, much of this discussion has focused on the ways in which outcomes are framed or the manner in which information is presented[5]. Deber and Goel[6] have discussed some of the failings caused by presenting only central tendencies—a common practice when outcomes are presented from the

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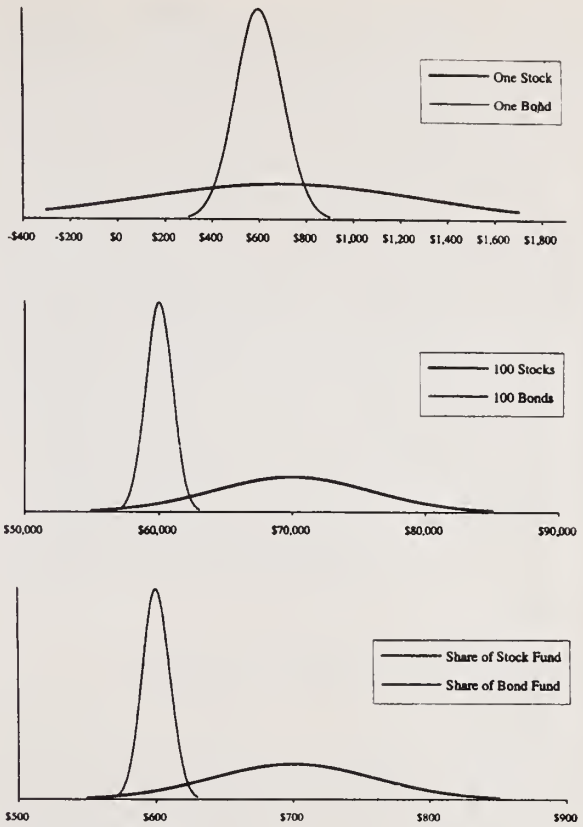

Figure 1. Distribution of potential dollar returns for investments in stocks or bonds assumed to be normally distributed. Top. Individual return anticipated after investment in a single stock with an expected return of $700 ± $600 or in a single bond with an expected return of $600 ± $100. **Middle.** Aggregate return anticipated for 100 individuals investing in 100 similar stocks or 100 similar bonds when the return of each individual stock or bond is assumed to be independent of that of the other. **Bottom.** Individual returns anticipated for each investor in the pool or fund represented in the middle panel. The distributions, narrower compared with those in the top panel, reflect the risk reduction provided by diversification. An investment in stocks rather than bonds is relatively more attractive in the bottom panel than in the top panel.

population perspective—but the implications of these concerns for clinical policy analysis are not generally well understood.

Managing Risk in Financial Setting

Every medical decision entails the chance that something will go wrong or that a different choice would have been better. Similarly, when an investor buys stock, there is always the chance that the price will fall or that a different investment would have done better. Investment risks provide a model for understanding the risks faced by physicians and patients in medical settings. Consider a person with $10,000 and a choice between investing in a stock or a bond. Both investments are likely to provide some return, but both have some risk, as shown in Figure I (*top*). The stock has an expected return or $700 ± $600; the bond has an expected return of $600 ± $100. Despite the higher return expected from the stock, individual investors might prefer the bond because it has lower variance.

An investor can reduce financial risk by creating a portfolio of investments. Because each stock or bond is unlikely to move in lockstep with other stocks or bonds in the market, variations in investment performance will tend to offset each other. The benefits of diversification are illustrated in Figure 1 (*middle*); the fund represented is assumed to have 100 investors, each contributing $10,000. Assuming that there are no administrative costs, a 100-stock fund would yield an expected return of $70,000; a 100-bond fund would yield an expected return of $60,000.

The risk faced by the fund as a whole depends on the correlation in performance among the stocks and among the bonds. When investments are not perfectly correlated, the risk faced by the fund is reduced. Figure 1 (middle) shows the outcome for the hypothetical case of independent returns. The distribution of potential returns is much narrower and less risky because the stocks and bonds move independently, and so poor performance of some stocks or bonds is offset by the better performance of others. A fund investing in 100 stocks can attract individual investors who dislike risk and would therefore not invest in only 1 stock. Individual investors can enjoy these benefits because they share in the risk reduction achieved by the portfolio. The distribution of returns hack to individual investors is shown in Figure 1 (*bottom*), which is identical to that shown in Figure 1 (*middle*) except in scale.

Managing Risk in Health Care Settings

The principles discussed above are basic to financial markets and represent well-understood mechanisms for managing risk in investment settings. The practices of some large-animal veterinarians use the

same kind of risk reduction in a health care setting. For example, a dairy farmer might consider attempting to increase the aggregate milk production of a herd of cattle by altering the herd's feed or by using hormonal manipulation. The interventions carry some risk because each cow might or might not respond with a greater return of milk. An intervention with a higher potential return but higher variance might be rejected for a single cow but accepted for a large herd. As long as the outcomes of the individual cows in the herd are not perfectly correlated, decreases in the dairy outputs of some cows might be offset by increases in the outputs of others, and so the intervention might be less risky than it would be if applied to a single cow. Just as an investor reduces risk by purchasing several stocks that react differently to market forces, a dairy farmer can reduce risk by considering the herd to be a diversified portfolio of cows that may react differently to any given health intervention.

Do Health Policy Analysts Treat People Like Cows?

The principles underlying portfolio theory are appropriate for investors or dairy farmers but may not be appropriate for decisions about human health. In particular, the assumption that outcomes faced by individual persons can offset each other effaces the moral distinction between these persons[7]. We argue that conventional approaches to policy analysis often make this error: They take a societal perspective and inadvertently assume a redistribution of outcomes to individual persons that cannot be achieved.

Suppose you are invited to play a game in which a fair coin is tossed. If it lands heads up, you receive $100. If it lands tails up, you must pay $50. How much would you be willing to pay to play such a game once? The expected value of the game is $25 (a 50% chance of gaining $100 and a 50% chance of losing $50). Because of the chance of losing $50, however, some might pay less than $25—perhaps $10—for the opportunity to play this game once. They pay a price lower than the expected value to compensate for the chance of losing. How much would you be willing to pay to play the game 100 times? The expected value of playing the game 100 times is $2,500 (100 x $25), but those willing to pay only $10 to play the game once might be willing to pay much more than $1,000 to play the game 100 times. Although each flip o; the coin is just as risky, the group of 100 independent coin flips is much less risky. (Under certain conditions, rejecting the opportunity to play once for anything more than $10 would imply that one must reject the opportunity to play 100 times for anything more than $1,000[8,9]. Nevertheless, playing once seems riskier, and perceptions may be as important as reality.) To the extent that people like to be compensated for assuming risk, they should pay different amounts per game if they are playing the game once or 100 times[10].

Many health policy analyses treat risky interventions like coin flips. In cost-benefit and cost-effectiveness analyses, for example, the expected benefits and burdens of a medical strategy are assumed to be distributed uniformly over the population[11]. The risk to each person, however, is greater than the risk perceived from an aggregate perspective because each person is unlikely to bear the average burden and receive the average benefit[12]. When you flip a coin 100 times. you care not about the outcome of each flip but about the average outcome. When you recommend a medical intervention 100 times, however, you ought to care about the outcome in each case. In neglecting the distribution of outcomes across individual persons, health policy analysts implicitly treat human populations in the same way that veterinarians treat herds of cattle, which is to say that they see them as an opportunity to diversify.

Financial Risk and Health Risk

In investment settings, financial returns are easy to redistribute equitably among investors. In health settings, however, redistributions of clinical outcomes are unattainable. Makers of health policy may he able to put individual patients into a common financial risk pool, hut they usually cannot put them intc a common *health* risk pool.

The inability to offset risks between persons helps to explain why some of the products of aggregative reasoning—such as cost-benefit analyses or clinical guidelines— often seem inappropriate to the management of individual patients. A recommendation not to order an extra test to detect a rare disease may he hard for some physicians to accept when they are treating patients who face the risks of the disease one at a time. The concern expressed by some clinicians in response to the recent recommendation[13] not to screen for ovarian cancer with CA 125 and transvaginal sonography reflects this tension: The benefits of such a recommendation accrue not to many average patients hut to a few diseased patients[14-18].

Rose[19,20] has described the "prevention paradox": Preventive strategies applied to the population may have large effects on overall health but seem unattractive at the individual level, where effects are small. In contrast, more targeted interventions do little for population health but may offer great promise of individual gain. Hux and colleagues[21] found that when faced with interventions that have only small mean population effectiveness, internists were more enthusiastic when presented with a wide range of

possible effects stratified over a heterogeneous population than when presented with mean effects for the population as a whole.

Other findings also reflect this tension. For example, Redelmeier and Tversky[22] compared the choices made by physicians who were presented with a clinical vignette described as a single ease with the choices of physicians to whom the clinical vignette was described as a common clinical problem. In one experiment, they found that physicians were more likely to order an extra test to detect a rare condition in an individual patient than in a group of patients. Although such differences might seem illogical, one possible explanation for them is that the physicians considering the group of patients intuitively saw an opportunity to diversify.

This reasoning appears to make sense if, as one expects, individual persons tend to react differently and unpredictably to the same medical intervention. When viewed as a group, their individual outcomes tend to offset each other. Therefore, from a population perspective, one sees less risk when using a single strategy repeatedly (in this ease, the strategy of not ordering an extra test) than when using it once, just as the coin flip gamble appears more attractive when one gets to flip the coin 100 times. But health policy recommendations are implemented at the bedside, where, in most cases, patients get only one flip of the coin. If health policy analyses are to be useful, they must reflect risks and benefits as seen from that perspective.

These differences in perspective are not overcome simply by using utility functions to capture patients' preferences for risk. In general, patient utilities—whether assessed using standard gambles or other techniques—reflect the preferences of patients for different clinical outcomes. One response to the concerns raised about public policy analyses, therefore, is that differences in risk perspective are already captured by the utility functions used for the analysis. This is true only if the argument of the utility function is the distribution of outcomes seen from the individual perspective—for example, if the utility function is applied to the distribution represented in Figure 1 (*top*) rather than to that represented in figure 1 (*bottom*). More commonly, however, public policy analyses are presented and judged by their aggregate outcomes.

How Else Might Diversification Be Achieved?

In addition to diversifying by using a single strategy repeatedly over different individual persons, one can diversify by using more than one strategy.

The approach of some large-animal veterinarians to the management of dairy farms provides an example of this form of diversification in the health care setting. To reduce the health risk of a herd of cattle, some veterinarians advocate following different strategies with different cows. Rather than treating all cows in the same way, they might change the feed for some cows and the hormonal therapy for others. If one knew in advance which strategy would be the best, one would follow that strategy uniformly in all cows and achieve the greatest improvements in health. But, because all strategies carry some risk and because the outcomes of different strategies are not perfectly positively correlated, the combination of strategies across different animals can produce overall improvements in the health of the herd that are less uncertain than those that would be produced by a strategy that treated all cows in the same way[23-25]. The goal of the portfolio approach is to identify a combination of interventions that provides the greatest return for a given amount of risk.

The rational for using different strategies with different cows is not that some cows have different preferences, or even that farmers have different preferences for different cows, but that a diversified approach is less risky overall. This rationale conflicts with the basic tenets of human health policy. In human health settings, arguments for using different strategies for different patients almost always derive from the understanding that patients have different preferences, not from the understanding that population risk can be blunted by using a mix of interventions across different persons. If portfolio theory were proposed as an effective method for designing human health policy, then to reduce risk to the population as a whole we might encourage variation in medical practice rather than trying to eliminate it. In fact, however, regional variation in medical practices is seen not as a way to reduce the aggregate health risks of a population, but as a signal that someone is doing something wrong.

Diversification is appropriate in veterinary settings but inappropriate in human health settings because large-animal veterinarians are primarily concerned with the health of the herd and care less about the health of each individual cow. In contrast, physicians ought to care about the health of each of their patients.

Guidelines for Clinicians and Policy Analysts

We argue that many policy analyses implicitly assume that diversification is attainable at the individual level when it is not. Because these analyses understate the risks and benefits seen by individual clinicians and patients, they cannot be assumed to provide useful guidelines for decision making at the bedside. Thus, their clinical application may be difficult or inappropriate. Although we suspect that, in many cases, the implications of a good analysis can

probably be used as a guide for the individual patient, clinicians and policymakers should consider several elements before reaching this conclusion.

First, they must be sensitive to the correlation structure of the clinical outcomes represented in the policy analysis. The more individual patients vary in their responses to treatment, the less a population-based analysis should be trusted for individual decisions. The opportunity to diversify increases as the clinical outcomes of different patients become less positively correlated. Because policy analyses inherently offset risks across individual persons, in these situations, they will understate the risks that actual patients face.

Second, they should note how many people will be affected by the interventions. In general, the larger the number of persons involved, the more risk reduction is possible from the population perspective and the more likely a given reduction in this risk is unavailable to individuals.

Third, they must be cautious about close calls[26]. When the expected outcomes of alternative strategies appear similar, errors inherent in the perspective of the analysis are more likely to have swayed the recommendation one way or the other. The direction of the bias is impossible to define in the abstract; readers must evaluate these analyses using their own judgment and intuition on a case-by-case basis.

Finally, they should be cautious about recommendations that do not consider population diversification strategies when these may indeed be applicable. If two strategies are truly close calls on the basis of the expected outcome to the individual patients, then the population perspective can be legitimate. Under these circumstances, the opportunity to diversify serves the important societal goal of risk reduction at no cost to individual persons—either by making use of natural and unpredictable differences in the responses of individuals to a single treatment plan, or by using different treatments that have similar expected outcomes with different patients.

Those who conduct and report policy analyses can help clinicians reach appropriate conclusions by considering these four points in advance. They can assist further by not merely reporting their results in terms of means and expectations, but by also reporting the distribution of potential outcomes that individual patients might face, or by providing some other measure of variance seen from the individual perspective.

Conclusions

Population-based health policy analyses inherently aggregate the benefits and burdens of alternative interventions across different individual patients. Policies that result from these analyses raise several concerns.

First, patients can vary widely in their preferences, so analyses that use an average set of goals may not represent the interests of all patients, who usually face a personal cost different from the cost used for the analysis. Third, the interests of society are often distinct from those of individual patients, and so some policies developed to further societal goals can seem inappropriate for some patients' interests.

In this paper, we have discussed an additional problem. The assumption that benefits and burdens can be aggregated and then redistributed across individual persons in a population leads naturally to models in which benefits and burdens borne by different individual persons are presumed to offset each other. In turn, overall population risk is blunted, as it would be in a portfolio of stocks or cattle when financial or veterinary outcomes are less than perfectly positively correlated. But these perceptions are illusory at the individual level. Because health outcomes are less than perfectly positively correlated. But these perceptions are illusory at the individual level. Because health outcomes cannot be distributed across persons, these perspectives inevitably understate the risks seen by patients and misrepresent an important element in clinical decision making at the bedside.

We believe that this problem is genuine and that it underlies the intuitive resistance of many clinicians to these studies. As special forms of health policy analysis, such as cost-effectiveness analysis, become more influential in the establishment of health policy, gaps between policy and the actual decisions of physicians and patients take on a new significance.

Health policies can serve many agendas. Sometimes, a policy is put forth to serve important societal goals, such as cost-containment or the control of contagion. These policies may or may not coincide with the interests of patients. Other policies, such as clinical guidelines, are designed to automate or standardize approaches to important and common clinical problems. The purpose of these policies is to guide clinicians toward good decisions and good management strategies so that they can better serve their patients. Policies of this type—no matter how many patients they cover or how widespread their implications—in the end are implemented patient by patient. Unless these policies reflect the risks as seen from this perspective, they will be out of touch with the true interests they are meant to represent.

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The Diaries of Dr. Samuel Patton Hand 1911-1917

*by W. Foster Eich, M.D.**

Part II
Medicine in the Nineteen-teens

Abstract

Dr. Samuel Patton Hand practiced medicine in Demopolis, Alabama, for many years before his death in 1917. He kept diaries from 1911 to 1917. These diaries have been passed down through the family since his death. These papers review the diaries which present an intimate look at the life of an Alabama small-town doctor during this period. This paper deals with medical matters and continuing medical education, vintage 1911-1917. A previous paper looked at the doctor's daily life,[1] and a subsequent paper will examine the "pearl book" or notebook that he kept.

MEDICAL MATTERS FROM THE DIARIES

Dr. Samuel Patton Hand practiced medicine in Demopolis, Alabama, for many years before his death in 1917. During the last seven years of his life he kept detailed diaries,[2] which are still in possession of the Graves Family of Demopolis, Alabama. These diaries have been transcribed and made available to the family. A copy has been placed in the Reynolds Historical Library of the University of Alabama in Birmingham for scholarly use.

CLINICAL NOTES

The medical details of the diaries, of course, are of the greatest interest to physicians. In some ways Dr. Hand was a modern surgeon; he used anesthesia, and he practiced aseptic surgery. But in many ways his medical armamentarium was that of the nineteenth century rather than the twentieth; vitamins and antibiotics had not been discovered, intravenous infusions were a novelty, and blood transfusions unheard of. He makes no mention of using oxygen or X-rays.

Figure 1

His helplessness in the face of severe infection is evident. I believe that he was up-to-date for a small-town doctor of the day, but how little he could usually do is painfully obvious.

Fig. 1 is a picture of Dr. Hand with his partner, Dr. Bailey, and his nurse anesthetist, Miss Mary Armstrong. The other nurses are unidentified. (The defects are present on the original picture.) Note that the operating room has electric lights, but in the background the fixtures for gas lighting can still be seen.

In order to preserve patient confidentiality, patients are identified in this paper only by initials, which are coded.

Dr. Hand was a general practitioner, as is evident from the variety of cases that he mentions. I will discuss the cases by specialty, however, in order to organize them.

Immediately notable are the diseases that Dr. Hand treated that have practically disappeared today: typhoid, malaria, smallpox, polio, diphtheria, and pellagra.

Very few of Dr. Hand's drugs were really effective. Some of his therapies may have been effective, but

*412 South Cedar Street, Florence, Alabama 35630

have been superseded by more reliable means; for example, fever therapy:

(July 8, 1911) "I gave A.K., colored, vaccination typhoid Bacteria at 5 p.m. Temperature was 104 & 1/5. In two or three hours it went down 2 degrees. Dose about 16 millians [sic]."

A favorite diagnosis of the day was "acute indigestion." Most of these cases must have been due to coronary artery disease. In September, 1912, he mentions:

> "A.C.K. was taken suddenly ill this morning and I spent a good portion of the day with him and that night trying to relieve him.
> He is desperately ill with acute indigestion."

That he knew about angina pectoris is evident from these notes: (August 5, 1911) "...Bishop O. P. Fitzgerald died in Nashville, Tenn. this afternoon with Angina Pectoris. He was very old."

> (July, 1916) "Mrs. F.W.M had a violent attack of supposedly angina pectoris which was very severe and kept me with her nearly all day. She had one of the worse cases of tachycardia I ever saw. Pulse 190 to the minute. Brought her to hospital in Bley's Cadillac." (The next day he) "took her home in my car."

Most of his patients with chest pain, however, had "acute indigestion." This matter will be relevant when we look at the doctor's personal health.

In view of today's technology of intensive care and life support, it is interesting to look at Dr. Hand's techniques for life support:

> (Sat., August 31, 1912) "Was called in consultation by Dr. Staples to see Mrs. F. B. who had a violent attack of acute Bright's disease..."

> (Sun. September 1, 1912) "Was called again before day to see Mrs. B. at Prarieville and found her in a dying condition. Dr. Bailey brought over instruments and we transfused (intravenous) with a normal salt, but it did no good. She died a little after 12 o'clock."

Dr. Hand treated a large number of patients in his hospital for the "morphine habit." (Wednesday, March 31, 1915) "Mrs. U., the Cotton Factory woman I had treating [sic] for the laudanum habit for three weeks left today for her home at Short Leaf." This should not be surprising since the Harrison Narcotics Act (regulating the prescription and dispensing of narcotics) was not passed until 1914. He apparently did not routinely treat for alcoholism, but the following note is of interest: (Wednesday, April 2, 1913) "Dr. Bailey left with Dr. Savage to Drs. Patton and Wallace for treatment of alcohol habit." (I have generally identified patients by their initials, but in this case I have used the full name; I wanted to show that there was help for the impaired physician even then.) The treatment was apparently successful, because a note in September 1913 indicates, "We let Dr. Savage come into the hospital with us—$10 for operating rooms and lO% of his fees."

> Dr. Savage is mentioned repeatedly throughout the remainder of the diaries, and almost always in a favorable way. For example:
> (Nov. 28, 1914) "Dr. Savage, assisted by me, Mary Armstrong anesthetist, operated on a Negro, E. Q. for strangulated hernia since Wednesday, Nov. 25th. There was no gangrene in the gut and found the appendix in the sack. He ligated and removed that. He stood the operation very well and bids fair to recover after the strangulation for near 72 hours."

Again,

> (Dec. 12,1916): "I brought Mrs. U. in the hospital about 4 o'clock this morning as she had a very tedious labor. We gave her ether and used forceps but did not succeed until upon the advice of Dr. Savage, gave her an intravenous injection of 1/2 ampoule of pituitrin which brought active pains at once and was delivered very promptly."

Incidentally, relations between Dr. Hand and the other physicians in and around Demopolis seem to have been very proper, professional, and fraternal. They called each other into consultation frequently. There is one notable exception, and it involves Dr. Savage and Drs. Lacey and Cocke. (May 28, 1916 "Savage, Lacey and Cocke operated on Mrs. E.K. for appendicitis. Dr. Bailey and I were very conspicuous by our absence. We were not invited." Although this slight seems to have angered him, he apparently held no grudge; Savage, Lacey and Cocke are mentioned repeatedly in the diaries and never with any rancor.

Dr. Hand treated many medical conditions, of course, but he also did a great deal of surgery. Much of it was trauma or appendicitis, but virtually every kind of surgery is represented. (Saturday, April 12, 1913) "Removed H.D.'s left mammary gland today under ether, assisted by Dr. Bailey and Mary Armstrong. Dr. I.E. Wilson gave anesthetic. She was under ether and operation was done in 45 minutes. It was a cancer. Fee was $75. Operated on Q.F. for fistula at end of spine. Removed hemorrhoid. Fee $25. Weather very cool."

> (July 25, 1915) "....Diagnosed C.R.'s case—appendicitis. Advised immediate operation but he would not consent." (July 27) "C.R. has consented to an appendectomy and got ready and removed an acutely inflamed appendix—about 1 1/2 hours. Dr. Savage and Bailey assisted. He stood the operation well. I stuck the appendiceal artery with a small round needle which produced quite

a hematoma about base of the appendix. The peritoneum was hard to approximate."

(July 29) "C.R. is doing very well. Gave dose of castor oil and had a good movement from his bowels."

(July 10, 1917) "Mrs. W.H.P..... upon whom I operated last year for suppurative appendicitis, was taken sick in Forkland Sunday with obstruction of the bowels, was brought over in a car at 4:30 p.m. & found her pulseless, extremities cold & clammy. Gave hypo strychnine, atropine, morphine, and camphorated oil & did a colostomy under local anesthesia in the right side. She died at 8:30 p.m. and found upon autopsy a volvulus."

Dr. Hand did some very specialized surgery, indeed:

(Sept. 23, 1912) "I trephined B.H.K.'s head, assisted by Dr. Bailey and Savage. Removed a large plate of bone at the junction of frontal and right parietal bone." (Aug. 30, 1912) " I trephined. Q.'s head, and took out several pieces of bone.

He had convulsions from compression but after decompression he was relieved."

(June 27, 1916) " I operated on a Negro girl who was shot in the left leg about middle third below the knee about 2 years ago. There was a sinus over the tibia with a long spicula of bone protruding. Gave ether & removed about 1/2 doz. spicula of bone, curetted all the discoid [?] portion out, packed with iodoform gauze after applying iodine."

A large part of Dr. Hand's practice was devoted to obstetrics. From the point of view of modern obstetrics, the incidence of toxemia of pregnancy is startling:

(Oct. 19, 1912) " I was called to Spring Hill to see Mrs. D. B. in consultation with Dr. Abernathy. Spent the day and as she showed no progress I brought her to the infirmary. She progressed very well through the night and showed some sign of getting through. I spent the night with her in the infirmary."

(Oct. 20) "Mrs. B. had a convulsion at 9 0'clock and I arrived a few minutes after so I proceeded to deliver her with forceps. It took over 2 hours to complete the job. The baby, a boy, was stillborn. Mrs. D.B. is quite sick."

(Oct 21) "Mrs. D.B. is better but still quite sick." (Oct. 22) "Mrs. B. is much better."

(Much later, Feb. 12, 1914) " Mrs. B. is in Labor and had to divide some cicatricial bands in her vagina that formed from the last labor before the baby could be born. The baby was stillborn at 7:30 p.m. after a very difficult labor."

(Friday, Nov. 8, 1912) " Mrs. E. is not doing well—rather drowsy, dull and listless. Symptoms rather alarming. A beautiful day."

(Nov. 9)" I packed Mrs. G's uterus with the view of inducing abortion. Mrs. E., her 3 brothers, and Mrs. A. are here with her."

(Nov. 10) "We operated on Mrs. E. Rapid dilation, and took out portion of fetus membrane [sic] and placenta—again packed with gauze. Had a bad night. She is very bad indeed. Mrs. F. J. had a boy this morning about 2 o'clock. Badly asphyxiated. Mrs. I. had a girl this afternoon at 4:20, all right."

(Nov. 11) "We again curetted Mrs. E. and again removed portion of fetus. She is in a desperate condition. Gave normal salt solution hypodermoclysis. I irrigated uterus every 4 hours. Weather is fine."

(Nov. 12) " Mrs. E. died with toxemia of pregnancy this morning at 2:30."

Not all cases were so discouraging:

(Feb. 3, 1915) "Mrs. C.Z. was taken with labor pains at 2 a.m. I was called about 9. Gave twilight sleep at 2 p.m. and 3 p.m. Baby (a girl) was born at 6:45 p.m. No laceration and no memory of the labor at all. It was a perfect success."

Unfortunately, many cases did not have such a happy ending: (Nov. 19, 1914) "Mrs. C. Z. [not the same patient as mentioned above] was admitted to the hospital tonight about 9 'clock & operated (curetted) for incomplete abortion. At 9:26 p.m. she began ether and the operation was completed at 9:55 p.m.

(Nov. 20) Mrs. C.Z. had a bad night—still suffers with pain & has 104 degrees rectal temperature. She is quite sick."

(Nov. 25) "Mrs. C.Z. is better and sitting up and thinking of going home."

(Nov. 27) "Mrs. C. Z. got worse this morning suffering with her side and ovary (right) and has some fever."

(Nov. 28) "Mrs. C.Z. is not doing well. Called up Dr. Gay and he advised no operation but gin mixed with arnica & open Douglas's cul-de-sac if fever kept up." (Nov. 29) " Mrs. C. Z. is much better today."

(Dec. 3) "Mrs. C. Z. left hospital this afternoon."

Dr. Hand also did gynecologic surgery: (May 12, 1912) ".....did my first hysterectomy today."

To a pediatrician the following notes are especially interesting: (Nov. 8, 1914) "Mr. and Mrs. C. took C.

over to Marion today in a car when I had told her C. had diphtheria. They had to spend the night."

(Nov. 9) "Mr. and Mrs. C. & C. came on train tonight from Marion. I found C. worse. I gave her 4000 units of diphtheria antitoxin. Her throat cleared up in about the third day. I gave my first dose of diphtheria antitoxin to her."

(Nov. 25) "C. C. has diphtheria bacilli in her throat from examination from Montgomery."

(Wednesday, June 7, 1916) "Brought Mrs. U. A. Q. in to the hospital at 11 o'clock in labor. She was delivered of an eleven pound boy at about 3:30 p.m. The labor was about 16 hours. The baby slightly asphyxiated. The position was occiput posterior. The baby is having slight convulsions all through the night. I spent last night in hospital."

(June 18) Mrs. Q. is doing very well but baby is still having slight convulsions."

(Oct. 17, 1916) "Was called to see Mrs. P.'s little girl, B., at R.K.P.'s who was having convulsions & when I got there I found her temp. 107 1/2 in the axilla. I wrapped her in a cold sheet and gave her hypo of 1/24 gr. morphine. The cold pack reduced the temp. very rapidly and brought her to the hospital."

There is very little psychiatry in the diaries. Nevertheless, the following notes show that Dr. Hand had psychiatric cases in his practice: (Feb. 28, 1911) "Dr. Bailey and H.D. took D. P. to Tuscaloosa to the asylum..." (March 1) "D. P. would not stay in the Asylum and came back with Dr. Bailey and H.D." (May 26,1911) "W.Q. has become insane on religion. Her sister B. is insane—has pellagra."

Drs. Hand and Bailey both did autopsies. They also embalmed on occasion: (April 2, 1911) Dr. Bailey left on night train for Birmingham for Examination by Board of Embalmers." (June 6, 1911) "I embalmed Q.P.'s mother at 8 p.m. Used 1/2 gal 4% formaldehyde."

Dentistry, like medicine, was considerably less well-developed in those days. Nevertheless, progress was being made. The following notes are relevant: (Thursday, June 8, 1911) "Drs. Jones and Lee, dentists, operated on Rich McGratin's superior maxillary bone and some dead or diseased bone...[sic]"

(Nov. 27, 1914) "Dr. Laird extracted 3 of my teeth today under cocaine—practically painless. I had fever all night, I suppose from the extraction."

(Saturday, Jan. 2, 1915) "Laird finished my temporary set of lower teeth & I put them in this afternoon."

(June 8, 1916) "Cool and disagreeable. I had severe toothache so much that I took 1/4 gr. morphine by mouth—later took 1/4 by hypo and later a full glass of toddy. I got easy & spent the night in room 5 at the hospital."

On occasion, the name of a famous physician appears in the diaries; (Jan. 12) "Dr. Bailey left this a.m. with L.Q. and accompanied by Miss Mary Armstrong, for Boston, via Savannah G. where they take a steamer. He goes to consult Dr. Harvey Cushing in regard to L.'s condition..."

(Jan 20) "Dr. Harvey Cushing is expected to operate on L.Q. in Boston today—a suboccipital operation for tumor of brain....Dr. Cushing operated on L. in Boston this afternoon...." (Feb. 7) "Dr. Bailey, L.Q., and Miss Mary came from Boston on the 8 p.m. train." (June 19) "L.Q. is growing worse very rapidly...)

Physicians have a superstition that complications are much more likely when they are treating the family of another doctor. The following notes would support that belief: (Thurs, Nov. 21, 1912) "Mrs. Dr. P. had a baby this morning at 1:15. The cord was wrapped twice around its neck. It was born—the head and shoulders—before I got there. She only had a few pains. This should be Wednesday."

(Sept. 30, 1914) " I curetted Mrs. Dr. X. & the uterus was so soft and patulous that I had a perforation. Dr. Gay was over here to see R.A.'s baby & we called him in. He assured us that there would be no trouble—he had had the same accident several times."

(June 12,1915) " Dr. P.'s wife had a girl baby this a.m. at 2 o'clock. They waited too long in calling me & it was born before I got out of my house."

CONTINUING MEDICAL EDUCATION AND ORGANIZED MEDICINE

In this day when continuing medical education is big business, it is interesting to look back at Dr. Hand's continuing education. Much of it was informal in those days. For example:

(June 30, 1917) "Hot and dry. Lucy and I went over to Selma today. Dr. Skinner invited me over to witness an operation. He drained a gall bladder for a white woman at the Riverside Hospital & a Gastroenterostomy on a Negro woman at Burnville Hospital. Dr. Ira Skinner gave ether & used about one can for both operations. He did the gastro in 35 minutes and the gall bladder in about one hour..."

Dr. Hand records several meetings of the Medical Association of the State of Alabama. In April, 1915, the Association met in Birmingham. Dr. Hand records:

(April 23) "We had a 'waken time' over the Health Officer, Dr. N.F. Sanders, but he won the fight hands down...104 to 25. I was elected Coun-

sellor of the 1st district with Dr. H.F. Jones of Choctaw. I sat in the Association room 8 hours."

He was also active in the county medical society: (Dec. 2, 1914) "Dr. Bailey, Savage and myself went to Linden today in a car hired by Abernathy, to the Co. Society Meeting—roads were muddy. I was elected president....

This note from the 1915 county medical society meeting gives an interesting look into county medical politics:

(Tuesday, Dec. 7) "Cold & cloudy. I went to Linden with Dr. Bailey in his car. Savage, Lacey and Cocke all went down. Dr. Savage was elected President: Dr. A. N. Lacey defeated Dr. Abernathy for Co. Health officer.... He received 10 votes, Abernathy 5 & Brasfield 4. We adjourned at 3:30 p.m."

On occasion there were continuing education programs at these meetings:

(April 27, 1915) "Marengo County Med. Society met at the High School with no out of town doctors except Dr. Abernathy. Dr. Harper, of Selma, came over and made us a very interesting talk of Fevers in Children—their significance. Dr. Skinner also made a very instructive talk on splints, etc. Dr. Harper made a very interesting lecture in the high school on Typhoid & Malaria. He spent the night with me."

But the most intense continuing medical education experience Dr. Hand records was his trip to Washington and New York in April through June, 1913. On the way up, his train derailed in Salisbury, North Carolina; otherwise he had an uneventful 2-day trip to Washington, where he visited the Capitol, Library of Congress, White House, and Smithsonian, among other places. He notes that when he arrived in New York, he took two rooms at 303 W. 51st St. The two rooms cost $30 a week with board. Among his educational activities were the following: "Dr. Arthur from Colorado and I went to the Hospital for Ruptured and Crippled this afternoon."

"Saw 2 cases of operation of decompression of the brain this afternoon." "Saw Dr. Sharpe do two cases of decompression on 2 little babies, 2 or 3 months old, and remove a spina bifida on them. I watched the operation until 11:30 p.m." "I visited the hospital for the Ruptured & Crippled and saw several operations— straightening bow legs, shortening and lengthening the tendo-achilles." "Went to Skin and Cancer hospital and saw for the first time in my life intravenous anesthesia very successfully administered by English Physician Mr. Schlezinger. Dr. Johnson from Ark. Ballinson Hosp.[sic] and I went to see the Giants-Philadelphia play ball. It was a hard fought battle. The Giants..... won 7 to 6 in 14 innings."

As you see, Dr. Hand did not spend all his New York time in hospitals!

Besides baseball, Dr. Hand mentions the following "entertainments" – the opera, the "picture show," the Bronx Park Zoological Gardens, Coney Island, and church once or twice every Sunday. His final note from New York is for June 2, 1913:

"Heard Dr. L. Wyet* this morning, the last lecture at the Poly Clinic. We left New York on the Madison of the Old Dominion S.S. line at 3 p.m. Had a fine trip and spent a good night, Lucy was sea sick for a short time."

On the way home, he stopped in Virginia for the Association of Railroad Surgeons. He stayed at the Chamberlain Hotel, room 414—4th floor—at $9 per day. From there he returned by train to Demopolis.

THE BUSINESS SIDE OF MEDICINE

Dr. Hand's diary gives us some insight into the business side of medical practice. A few examples: (April 17, l911) "We received our sterilizer from Crown Surg. A. today. I returned to them by express the tan leather bag."

(Friday, Jan. 6,1911) "Bailey Drug Co. declared 16% dividend and reserved 7% in the treasury."

(Jan. 7, 1911) "I bought 4 shares of Bailey Drug Co. stock and gave them check for $400 for same today." (Feb. 4, 1913) "Bailey Drug Co. paid me 10% semi-annual dividend on 1900 dollars equal $190.00. Paid note Com. Nat. Bank...."

(July 27, 1912) "We bought J. R. Goodloe's house for an Infirmary from Mrs. Goodloe through her father...for $7,000. We moved K.B. from the Infirmary to her house in my car."

Dr. Hand and his partner operated the "Bailey-Hand Infirmary" together for several years. Dr. M. S. Brasfield, III, Dr. Hand's great-grandson, who practices pediatrics in Demopolis, has some dishes and other items used in the infirmary on display in his waiting room today.

Personnel problems were often a concern at the hospital: "Miss D. & Miss M. could not get along very well, so she (Miss D.) decided to leave for her home in Meridian today on the noon train. I am sorry to lose her. She was a Good nurse." [sic] Oct. 9, 1914) "Miss B. resigned as head nurse to take effect Oct. 25th, to go back to Dr. Moody, Dothan, Ala. at a raise of ten dol-

*The transcript has this as "Dr. L. Wyeth,~ but I believe that it refers to Dr. J. A. Wyeth, an Alabama native and renowned surgeon who lead in founding the Polyclinic. See Morris, John T., "Beyond the River," Alabama Medicine 63: No.l, (July 1993), pp 20-29.

lars per month above the price we were paying—$50.00."

(April 8, 1915) "Miss C. of Selma came to nurse for us in Miss R.'s place. Miss R. was taken sick and sent Miss C. Miss W. left for her home in Selma on the morning train. She was very unsatisfactory as a nurse." (July 24,1917) "Miss W. a nurse we have had for about 3 weeks left for her home in Meridian on the noon train. She is not a reliable nurse at all—would not do her duty and gave babies paregoric without instructions."

And lest we become too nostalgic about the "good old days" before hospital insurance and managed care, the following note might well be considered:

> "I went over to Meridian today to put an account against P.W.W. for Infirmary fees and operating on his wife, in the hands of J. M. McBend for collection. Took dinner at the Olympia Restaurant, cost 50 ¢. Returned on the 6:30 train."

Apparently some things never change.

The Doctor's Health

Dr. Hand occasionally comments on his own health, and these are interesting notes. He had chronic nose and sinus problems, which were usually treated by Dr. Kirkpatrick of Selma.

(July 16, 1912) "Went to Selma today and had Kirkpatrick to remove inferior turbinate (back of my nose). No pain until after. Spent the night as his guest at the Vaughn Memorial. He had to pack nose to prevent bleeding."

(July 17, 1912) "Suffered a good deal. Lost weight. He removed packing today. Took dinner with Welch....Came home on 4:20 train."

(Monday, Oct. 14, 1912) "I went over to Selma this morning to see Kirkpatrick about my nose...."

(Oct. 15, 1912) "I went over to Selma again today. Kirkpatrick treated my nose again and I returned on the 4:30 train."

(Oct 16, 1912) "I went to Selma on the noon train to have Kirkpatrick treat my nose. I saw him do a tonsillectomy on a Negro woman."

(Monday, April 9, 1915) "Had my first attack of urticaria which kept me scratching nearly all night."

As noted earlier, most cases of coronary artery disease in those days were diagnosed as "acute indigestion," although Dr. Hand was aware of angina pectoris. Whether or not he is using denial about his own health or not is difficult to tell. An early mention of his health is dated March 17, 1911: "I had a most severe attack of neuritis of the brachial & ulnar nerve and pain radiated in the region of my heart. About 3 o'clock a.m. Dr. Bailey had to give 2 hypos of morphine to relieve me. He stayed until about daylight. I suffered all day. Dr. Goodloe came up with them." But, on his birthday the next year (Dec. 17,1912) he notes; "I am 53 years old today. Feel first class and young as ever." For the most part, except for his nose and an occasional attack of "neuritis" or "acute indigestion," he seems to have been in good health. But the following sequence from August, 1917 begins ominously:

> (Aug. 11) "No rain today. Had a very severe attack of acute indigestion tonight immediately after supper, from I think bologna sausage. Had to spend the night in the hospital, took 1/4 gr.morphine & apomorphine before I got any relief. Was sick all night."
>
> (Aug. 12) "No rain today. Still sick all day. Everything I ate disagreed with me...."
>
> (Aug. 13) "Cloudy but no rain. Had another attack of acute indigestion this morning after breakfast from eating toast, butter & a cup of coffee." This is followed by an entry in another handwriting: "Dr. Hand died suddenly—angina pectoris—about 11:40 tonight after returning from picture show. I was with him about 15 minutes before death. Ed. [Bailey, Dr. Hand's partner]"

Dr. Hand has four descendants in the medical community today. Dr. M. Stanhope Brasfield, III, his great-grandson, practices pediatrics in Demopolis. Dr. M. Stanhope Brasfield, IV, is a family physician in Florida. My wife, the former Eugenia ("Ginger") Graves, is Dr. Hand's great-granddaughter, and our son Mark Samuel Eich is a resident in internal medicine at the U. S. Naval Hospital, Portsmouth, Virginia.

References

1. Eich, W. F., the Diaries of Samuel Patton Hand, 1911-1917; Daily Life;" as yet unpublished manuscript

2. The Diary of Dr. Samuel Patton Hand; unpublished manuscript in possession of the Graves family of Demopolis, Alabama. Copy in the Reynolds Historical Library at the University of Alabama in Birmingham.

The Business Side of Medicine

Editor, Alabama Medicine:

I read with great interest the article entitled "Managed Care or Mangled Care?" written by Mr. Conner. I think Mr. Conner very clearly points to the potential conflict between caring for patients and looking out for dollars. Health care can be divided into two facets, namely, the business and health care and the practice of health care. Unfortunately, these two facets are not necessarily compatible though I totally agree with Mr. Conner's point that health care should not be driven by the dollar.

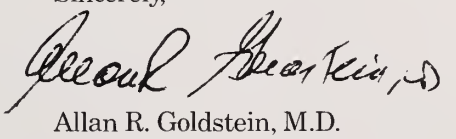
I would, however, like to approach the issue from a slightly different point of view. First of all, I think all physicians should understand that they do not have any obligation to practice bad medicine because of any rule set forth by any managed care organization. Ideally, managed care is supposed to find the most efficient way to deliver what a patient needs. The managed care company has a fiduciary responsibility, but the physician has the most important responsibility. That responsibility is the patient's needs come first. We must satisfy these needs in the most efficient manner possible and learn how to provide what our patient should have cost-effectively.

When physicians feel threatened by a managed care company, they need not back off of what they feel is in the best interest of the patient. They need to discuss with the patient what they feel should be done and make it clear to the patient that if it is not done, then it is something that the patient and/or the insurer must take responsibility for rather than the doctor being held responsible. Whatever a physician signs his or her name to indicates that that is the care that that physician felt was necessary for the patient.

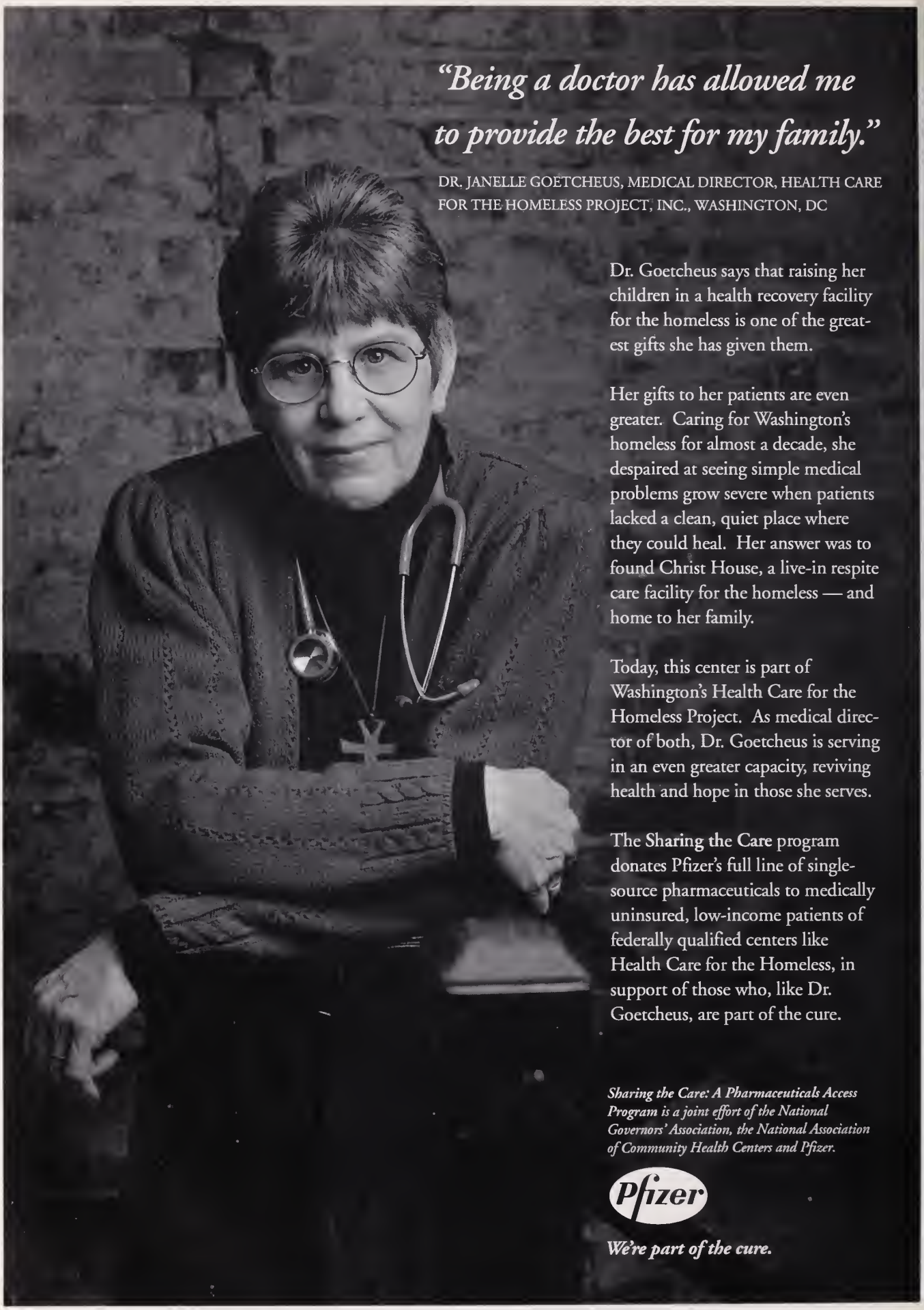
Health care has been inefficient and is costly. It is our responsibility to make sure that patients are treated appropriately, but we must also be conscious of the economics. Unnecessary testing and treatment is not good ~ should make every effort to avoid that.

I hope that no one feels that I am disagreeing with Mr. Conner. I would just like to make sure that all physicians realize that they remain the director and not the supporting cast.

Sincerely,



Allan R. Goldstein, M.D.
Birmingham, August 10, 1995



"Being a doctor has allowed me to provide the best for my family."

DR. JANELLE GOETCHEUS, MEDICAL DIRECTOR, HEALTH CARE FOR THE HOMELESS PROJECT, INC., WASHINGTON, DC

Dr. Goetcheus says that raising her children in a health recovery facility for the homeless is one of the greatest gifts she has given them.

Her gifts to her patients are even greater. Caring for Washington's homeless for almost a decade, she despaired at seeing simple medical problems grow severe when patients lacked a clean, quiet place where they could heal. Her answer was to found Christ House, a live-in respite care facility for the homeless — and home to her family.

Today, this center is part of Washington's Health Care for the Homeless Project. As medical director of both, Dr. Goetcheus is serving in an even greater capacity, reviving health and hope in those she serves.

The **Sharing the Care** program donates Pfizer's full line of single-source pharmaceuticals to medically uninsured, low-income patients of federally qualified centers like Health Care for the Homeless, in support of those who, like Dr. Goetcheus, are part of the cure.

Sharing the Care: A Pharmaceuticals Access Program is a joint effort of the National Governors' Association, the National Association of Community Health Centers and Pfizer.

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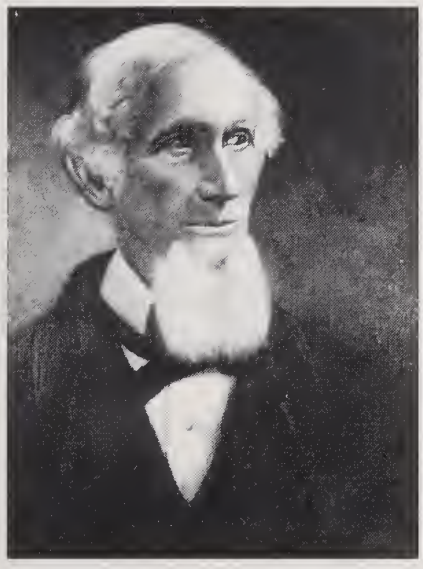
We're part of the cure.

The Enigmatic Josiah C. Nott of Mobile:
Physician, Surgeon, Educator, And Racial Theorist

*Paul S. Howard, M.D., F.A.C.S.**



Josiah Clark Nott (1804-1873) maintained a long and lucrative medical practice in Mobile, Alabama during the mid 1800's. He believed that his practice was favorably influenced by his extensive writings in the field of ethnology. In fact Nott was considered one of the three or four foremost "racial theorists" of the nineteenth century; the others being Samuel George Morton, Louis Agassiz, Ephrain George Squier and George R. Gliddon. Nott was more than a simple southern racist. Racism can only be defined in a social sense and in the context of the times. It is in the context of the nineteenth century Alabama that we should look at the life and accomplishments of Dr. Josiah Nott.

Nott's first mentor on racial theory was the controversial Thomas Cooper. Cooper began his public career in the practice of law, amateur medicine (one year medical reading) and disagreement with the lay and clerical authorities of the time (1794). Even though Cooper had served prison time for seditious libel, his views were eventually to become popular during the Federalist presidency of Thomas Jefferson (1800-1808) and for a time Cooper served as a federal judge. Cooper was a brilliant and creative teacher who came under attack from the Presbyterian clergy, whom he scathingly assaulted over the years. Nevertheless, Cooper's academic reputation was such that he was appointed President of South Carolina College in 1820. During his tenure he was said to combine "strong southern views on politics and race with continued opposition to organized religion."

Cooper instructed another famous physician of the times, J. Marion Sims, who said of Professor Cooper in his autobiography The Story of My Life – Cooper was a "pronounced infidel, and every year, lectured on the 'Authenticity of the Pentateuch' to the senior class, generally six or eight weeks before their graduation."

The young Josiah Nott came from a family of longtime Presbyterians. Nott later came under the spell of the radical Cooper at South Carolina College. This tutelage affected the focus of Nott's writings during the most productive period of his life in the 1840's and 1850's. Both Cooper and Nott were proof that liberal thinking on scientific and religious matters could be combined with the (then) Southern attitude of racial extremism.

Nott graduated from South Carolina College in 1924 and began reading medicine in Columbia with Dr. James Davis. At that time in South Carolina there was no formal medical education, although a new medical school in Charleston was being considered. Even the brilliant Thomas Cooper had failed in creating a medical school in conjunction with the South Carolina College. Nott was forced to travel North to New York to attend the College of Physicians and Surgeons. After matriculating in 1825 he left in 1826 for more educational stability at the University of Pennsylvania. Philadelphia was not only the center of American medical education but also was to become the center for American ethnology and racial theory. Philadelphia was the home of the famous physician, Samuel George Morton who was the best known racial theorist of that time. He wrote a textbook, Crania Americana, which discussed the shape of the human cranium with observations concerning the differentials in size of the skull between races.

Nott was raised in a family of educated, even intellectual people, the so called Southern aristocracy. After the compulsory first two years of medical school and a subsequent uninspired thesis on "Costiveness," he stayed on for another year of "residency" training (which was very rare in medical education at the time.) During that year the brilliant and aristocratic Nott would catch the eye of another Southerner, the famous William E. Horner of Virginia. Dr. Horner and Dr. Samuel Jackson influenced the remainder of Nott's medical career. Jackson was one of the leading anatomists and surgeons in Philadelphia at that time and under Horner and the Chief of Surgery and Professor of Anatomy, the elegant Dr. Phillip Syng Physick, Nott's surgical abilities were nurtured. Jackson was one of the first physicians to avail himself of French medical training in Paris under the internationally renowned Francois Joseph Victor Broussais, founder of the French School of Physiologic Medicine. The French school emphasized clinical observation,

postmorm examinations and statistical analysis in attempting to identify specific causes for specific medical problems. This "school of Broussais" was in stark contrast to the previous metaphysical emphasis. This new materialist approach well suited Nott. After his postgraduate year, and under the tutelage of Horner, Nott continued his education and stayed in Philadelphia yet another year in the position of "demonstrator of anatomy" at the University of Pennsylvania Medical School for the 1828-29 academic year.

Nott returned to Columbia in the spring of 1829 to begin practice. At that time Nott had prepared to practice medicine with more education and clinical training than almost any American physician of the time.

As Nott began his practice the doctrines of Broussais were widely in use and influenced almost all American physicians, including Nott's older brother, William Blakestone Nott. (The elder Nott had even christened his older son James Broussais Nott.) Broussais stressed that generalized symptoms such as fevers could be attributed to specific lesions rather than as a result of some ephemeral miasma. Broussais was well ahead of his contemporaries in France. His next step led him to believe that those specific lesions which cause generalized symptoms were entirely localized within the gastrointestinal tract. This assumption, although incorrect, did improve medical care of that time because Broussais also recommended a regimen of diet and localized bloodletting which was less invasive and drastic than the current harsh medication (Calomel), purges, emetics and generalized bleeding. Broussais also recommended that the metaphysical and spiritual explanations of human disease be discarded. Broussais pushed medical thought away from mysticism but not totally in the correct direction. He recommended localized blood letting from inflamed areas by the use of leeches (as opposed to generalized blood letting by opening a vein with a lancet).

Nott, trained in these doctrines, was an enthusiastic proponent to the point of publishing a translation of the Frenchman J. M. A. Goupil's interpretation of Broussais' work, An Exposition of the Principles of the New Medical Doctrine. One particular attribute of Nott's was exemplified by this extensive and detailed understanding of the Broussais doctrine – Nott expanded knowledge and was a diligent and assiduous observer of his patients. For example, when Nott was convinced of "selective bleeding" he became an expert in the care and feeding of the leeches of South Carolina and instructed other physicians in their capture and use.

Nott's earliest incursion into medical education was with Dr. Robert W. Gibbes in Columbia. Nott and Gibbes, realizing that few students were prepared to accept the first two years of medical training, began a preparatory school to help "pre-med" students with introductory lectures on anatomy, surgery, chemistry and materia medica. Nott was a superior lecturer in anatomy and surgery.

Nott was to recognize the need to further his own medical education "at the feet of the masters" and after five years in general practice left for Paris in 1835. The glory of Paris for American students was the unique opportunity to observe at first hand an extensive number of patients, by attending the numerous and well populated clinics of that time. In fact, Paris was considered the center of medical care in the world and drew hundreds of Americans to study medicine in the 1830's. During Nott's stay in Paris he witnessed first hand the decline of Broussais and selective bleeding. This helped place Nott at the forefront of American medical care. In fact, J. N. Warren, who also studied in Paris in the 1830's, commented in a letter to his father that Parisian medicine "seems to be more an object to study the natural history of disease and to perform an operation beautifully and quickly than to save the life of the patient." Nott never fell into Warren's Parisian intellectual trap; moreover he retained his caution in the use of the strong and harsh medicinals of the day. In fact, a Mobile colleague (Dr. William H. Anderson) commented that Nott was extremely cautious in the use of drugs. When specific remedies proved ineffective, Nott would immediately drop the ineffectual drug (such was the case in the use of Quinine for the treatment of yellow fever in addition to malaria). Nott also dabbled in the practice of mesmerism and the extensive use of placebos. It was said that Nott was successful in mesmerizing some of his female patients simply by the force of his intellect and personality.

In the 1830's the trickle of emigrants from South Carolina to Alabama became a virtual river. The political environment, a general societal malaise and the proverbial search for greener pastures led Nott as well as thousands of others (including J. Marion Sims) to Alabama. Nott and his equally disillusioned father-inlaw, James S. Deas, pulled up their South Carolina stakes and moved to the bustling port city of Mobile in 1836.

Mobile had been settled by the French as far back as the early 1700's. In the years prior to the Civil War this city was in a period of great growth and economic expansion, principally based on the burgeoning cotton trade. The cotton trade was linked to the cheap labor provided by slavery and Mobile merchants became rich providing cotton to European traders. Mobile was also a cosmopolitan, charming city with a distinctive European flavor.

Over the next 25 years Josiah Nott developed a thriving medical practice based partly on his exemplary medical training and partly on his blossoming reputation as one of American's foremost racial theorists – in essence the most famous and extensively published southern racist of his time. Nott began to write on racial issues in the 1840's. His personal style as developed was vigorous, extreme and idiosyncratic. It has been said that Nott's motivation was the desire to defend his Southern way of life, which depended on the culture and economics of Mobile. The Southem economy also depended on the slave trade for its exis-

tence. A Southern friend and physician, Richard D. Arnold, M.D., expressed this viewpoint succinctly in 1837: "The institution of slavery, although indefensible on the ground of abstract rights, can be defended and well defended upon this, that so intimately is it mingled with out social conditions, so deeply has it taken root, that it would be impossible to eradicate it without upturning the foundations of that condition."

During the 1850's, Nott was co-author of three major books on racial theory: The Types of Mankind with the famous Egyptologist, George R. Gliddon, Essai sur l'inegalite' des races humaines, a translation of the work of Count Joseph Arthur de Gobieau and Indigenous Races of the Earth, again with George Gliddon. These three major works, although flawed in a scientific sense, made Nott famous.

Nott left Mobile for New Orleans during the 1857-58 academic year as Professor of Anatomy at the University of Louisiana in New Orleans. During this time he was diverted from his increasingly stale racial writings to find new energy in writing about medical education. Although his stay in New Orleans was short-lived, it renewed his previous interest in medical education. Nott moved back to Mobile and addressed the recently formed Alabama Medical Society (1846) in his vision for an Alabama Medical School. During the late 1850's the entire Board of the Alabama Medical Society was composed of physicians from Mobile: Nott was President and his good friend William H. Anderson was Treasurer. Using his considerable local and statewide influence, Nott convinced the legislature of the state of the need for an Alabama Medical School. Unfortunately the legislature did not think enough of the plan to fund the project so Nott persuaded many of his rich Mobile merchant patients to subscribe a total of $75,000. Armed with this money, Nott traveled Europe in 1858 buying teaching specimens and books for the fledgling medical school – more than enough to serve medical education well. The first medical school class in Mobile matriculated at the Alabama Medical College in November 1859. Nott had arranged for a faculty of seven including himself as Professor of Surgery and his old friend William H. Anderson as Professor of Physiology and as the first Dean of the Medical School. The medical college was an immediate success and enrolled more than 100 students in its first class.

A retrospective view of Nott's racial writing may paint an unduly negative picture of a man who was otherwise a well trained and astute physician. The mere fact that Nott was a Southerner does not give him an excuse for racial bigotry. Many other physicians of similar southern upbringing, particularly J. Marion Sims, conducted their lives in different fashion and did not use the racial consciousness of the times to support the perpetuation of slavery.

Nott was at his soul a man of science and in all aspects of his professional and personal life he followed the scientific creed. However, in his racial writings he deviated so far from his intellectual roots and wrote using only opinion, innuendo and pseudo-science. He continued to bait the clergy at every opportunity. He was successful in helping to remove the Bible as a source of scientific doctrine especially regarding geology and anthropology. This small, but secondary development in no way justifies supplying thousands of 19th Century Southerners "scientific" justification for racial bigotry.

The Civil War was a devastating blow for Josiah Nott. He lost two sons in battle during the war (He had previously lost four children to yellow fever in a single week prior to the war). The union victory over the Nott family was complete when the first medical school in Alabama, principally funded by Nott in 1859, was designated the Freeman's Bureau in Mobile and as a school for Negro children. Nott thought that this was a particularly vicious attempt to completely subjugate the South. In fact the subversion of the Medical School in Mobile was but one of many occupational acts perpetrated by the Union during the ten years after Lee's surrender.

Nott was left a broken man after the Civil War, his family decimated, his beloved South full of freed slaves and the cause of racial inequality and racial theory unpopular. In his declining years Nott decided to retreat from post-war Mobile and reconstruction and to seek a rejuvenation of his medical career in the North. He first moved to Baltimore and then on to New York where he diverted his interests to gynecology and renewed an old friendship with his fellow Southerner, J. Marion Sims. When Nott focused his considerable energy and intellect on a subject, he excelled. Such was the case for gynecology. Nott became an excellent practitioner and was highly thought of in New York. However, he suffered one last degradation: he was denied privileges to practice gynecology at the New York Women's Hospital. It appears that his Southern heritage swayed the board to deny his application. Nott went on to make substantial contributions to uterine surgery, including three long pieces on intrauterine injections, particularly in the treatment of endometritis. One of these papers was read before the Medical Society of the County of New York.

Nott returned to Mobile in ill health during the winter of 1872. He died of tuberculosis in Mobile in March 31, 1873 on his 69th birthday. Appropriately, Nott was buried in the South as no other man represented the strengths and weaknesses of the 19th Century South more than Dr. Josiah C. Nott. He was generous to his friends and compassionate to his patients, whether rich or poor, black or white. He was a passionate man who approached his education and medical practice with a zeal rarely found during the infancy of medicine. He became a physician for all the right reasons and furthered the effectiveness of medical care during his time. He became an ethnologist in an attempt to justify the way of life he had known in the South. Evidently his arguments were convincing to the non-Southern elite cultural scientists of his time.

Although in retrospect Nott's ethnological writings seemed radical, they were not so during his time.

An analogy can be made between Nott's ethnological writings and the medical knowledge of that day. We now look at "selective bleeding" with leeches as a very interesting side issue in medical history, non-scientific, and profoundly inaccurate. However it was current practice in the mid 19th century. Concomitantly we find white supremacy to be the idea of a lunatic fringe of society today, yet it was universally accepted, much as the use of leeches was accepted, in the nineteenth century United States. Thus, we should not judge Josiah C. Nott too harshly, for he was one of the great southern physicians and surgeons of his time.

Original Anatomic Speciments Obtained In Europe By Josiah Nott in 1858

NHLBI Panel Reviews Safety Of Calcium Channel Blockers

National Heart, Lung, and Blood Institute

National Institutes of Health • Public Health Service • U.S. Department of Health and Human Services

Short-acting nifedipine, a type of calcium channel blocker prescribed for hypertension and certain heart disorders, should be used with "great caution (if at all)," especially at higher doses, concludes the National Heart, Lung, and Blood Institute in a statement for health professionals.

The statement is based on a review of the available scientific evidence on the safety of calcium channel blockers, including smaller clinical trials and several new studies. The review was conducted by an ad hoc panel on calcium channel blockers convened by the NHLBI in June 1995. Among the studies reviewed is a meta-analysis of 16 trials of nifedipine in patients with coronary heart disease, published in the September 1 issue of the American Heart Association's journal Circulation. The meta-analysis, which pooled the results of the 16 studies, revealed an increase in deaths among patients taking nifedipine in doses of 80 mg. or greater.

The recommendation concerning nifedipine was one of several contained in the NHLBI statement, which is intended to help guide physicians and other health professionals as they advise their patients about the safety of calcium channel blockers. "This statement is intended to provide a much-needed perspective on the safety and effectiveness of calcium channel blockers," said NHLBI Director Dr. Claude Lenfant. "It will help physicians counsel their patients, many of whom panicked when the results of a case control study of calcium channel blockers were misinterpreted," added Dr. Lenfant. The statement acknowledges that calcium channel blockers are effective in the relief of certain heart disorders such as angina pectoris and some arrhythmias and in the reduction of blood pressure. It cautions, however, that like most drugs, calcium channel blockers have multiple effects, so it is important to establish the risks as well as the major benefits. There are three sub-classes of calcium channel blockers. The following is a list of classes and examples of each: dihydropyridines (nifedipine), phenylalkylamines (verapamil), and benzothiazepines (diltiazem). These three "sub-classes" are chemically distinct and have some pharmacological differences. In addition, several calcium channel blockers have both shortacting (requiring several daily doses) and long-acting (once daily) forms. The NHLBI statement concludes:

•The nifedipine finding cannot necessarily be generalized to any other calcium channel blocker including longer-acting dosage forms of nifedipine and short-acting formulations of other drugs such as diltiazem and verapamil. The latter two drugs were associated with an increased risk of heart attack in a University of Washington case-control study of hypertensive patients. However, diltiazem and verapamil were not associated with increased risk of death or heart attack in other studies, including well-designed clinical trials in heart attack patients, a group at high risk of recurrent heart attacks.

•The results of large-scale randomized clinical trials, such as the ongoing Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT), are essential to the ultimate resolution of the issues of safety and effectiveness.

•Health professionals should review current treatment guidelines, including the fifth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure (JNC V). According to JNC V, which is a document produced by the NHLBI's National High Blood Pressure Education Program, calcium channel blockers and other alternative drugs should be reserved for special situations or when diuretics and beta blockers have proved unacceptable or ineffective.

•Current uncertainties about the choice of drugs for the treatment of hypertension should not interfere with efforts to achieve blood pressure control. It has already been proven that treating hypertension prevents stroke and heart attack. The complete text of the NHLBI statement will be available online (fido.nhlbi.nih.gov or gopher://gopher.nhlbi.nih.gov/). Members of the press can call (301) 496-4236 for the statement.

NEW ANALYSES REGARDING THE SAFETY OF CALCIUM-CHANNEL BLOCKERS: A STATEMENT FOR HEALTH PROFESSIONALS FROM THE NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

During the late summer and fall, three scientific papers are being published in medical journals reporting new analyses regarding the safety of calcium-channel blocking drugs. Anticipating the release of these data, the National Heart, Lung, and Blood Institute (NHLBI) convened an Ad Hoc Panel on Calcium-

Channel Blockers in early June, 1995. Based on the presentations and discussions at this meeting, the Institute has prepared this brief statement to provide a perspective on the new information.

Background

The calcium-channel blockers (CCBs), also called calcium entry blockers and calcium antagonists, are a class of vasodilating drugs first introduced into U.S. clinical practice in 1980. The main labeled indications for their use are the treatment of arterial hypertension and of chronic angina pectoris. Their potential effects in preventing, ameliorating, or retarding the progression of other major cardiovascular conditions have also been studied. There are three sub-classes of CCBs that are chemically distinct and have pharmacologic differences: the dihydropyridines (prototype—nifedipine), benzothiazepines (diltiazem), and phenylalkylamines (verapamil). In addition, several CCBs have both shortacting (requiring multiple daily doses) and long-acting (once daily) dosage forms. The latter have been introduced only in recent years.

Concerns about the safety of some CCB drugs first drew attention following the publication of several meta-analyses during 1989-91[1,2,3]. Using statistical methods for pooling results of randomized clinical trials conducted in patients following myocardial infarction (MI) or with stable or unstable angina, these analyses suggested that CCBs of the dihydropyridine subclass (short-acting nifedipine in all but a few of the long-term trials) increased the risk of mortality (by about 16 percent) and reinfarction (by 19 percent). Non-dihydropyridine CCBs (diltiazem, verapamil) were associated with neither increased nor decreased mortality, but pooled results tended toward lower rates of nonfatal MI.

New Analyses

A publication in the September 1 issue of *Circulation*[4] extends the meta-analyses just described to address the question of dose-response. In order to do so without attempting to equate doses of different drugs, these analyses were confined to the 16 trials of nifedipine in patients with clinical coronary disease, mostly with acute ischemic syndromes. The trials were divided into six groups according to the dose used in those randomized to nifedipine treatment. A dose-response relationship was observed, and mortality was higher in nifedipine-treated patients compared to placebo in trials that employed a dose of 80 mg daily or greater.

Another study, focused on CCBs in the treatment of hypertension, was published in the August 23/30 issue of the *Journal of the American Medical Association*[5]. This is the observational (case-control) study first reported by Psaty et al. at an American Heart Association conference in March, 1995 that was widely discussed in the lay press. As in all observational studies, the choice of drug for each patient was determined by the treating physician based on relevant aspects of the patient's medical condition, likely including risk factors for MI, the cardiovascular (CV) outcome addressed by the study. The investigators attempted to extract information on such confounding factors from the medical records and control for them in their analyses; in retrospective studies there is always some question about the success of such efforts. Two main comparisons were carried out: CCBs versus diuretics in relationship to MI risk in patients free of CV disease according to the medical record; and CCBs versus beta-blockers in patients both without and with diagnosed CV disease (but not a prior MI or heart failure). The results showed a higher risk of MI (by about 60 percent) associated with CCB use compared either with diuretic or with beta-blocker treatment. Further, the higher the CCB dose, the greater the relative risk of MI compared to each of the other drugs. The higher risk of CCBs compared to beta-blockers was seen in patients with and without diagnosed CV disease. When individual CCBs were compared to beta-blockers, the MI risks were higher for each—for nifedipine (by 31 percent), for diltiazem (by 63 percent), and for verapamil (by 61 percent)—but the increased risk was statistically significant only for the latter two drugs. All of the CCBs in this study were in short-acting formulations. Note that the results with diltiazem and verapamil in this population are at odds with those of randomized trials in a post-MI population, a group at high risk for recurrent MI, in which diltiazem and verapamil have had either no effect on events or have shown a favorable trend. The different results could reflect the different populations or could reflect failure to adjust fully for coronary risk factors.

The third new study will be published in the *Journal of the American Geriatrics Society* in November[6]. Like the study by Psaty, it is observational in nature, based on records collected for other research purposes. This study was conducted by Pahor, Guralnik Havlik and colleagues at the National Institute on Aging in a sample of elderly patients. The analyses focused on risk of mortality in patients prescribed single drug treatment for hypertension, comparing individual CCBs with beta-blockers. Risk was significantly higher for nifedipine, increased but not significantly so for diltiazem, and not increased for verapamil. Here also, the investigators adjusted for other CV risk factors to the extent possible. Again, all of the CCBs were of the shorter-acting type.

Clinical Trials in Hypertension

The last two studies described above are observational and thus subject to all the potential biases of such study designs. Therefore, it is important to consider evidence from randomized controlled trials in hypertensive patients. Unfortunately, the completed trials comparing CCBs to other antihypertensive drugs or to placebo, such as the Treatment of Mild Hypertension Study[7] and the Veterans Administration Monotherapy Trial[8], included only 100-200 patients

per treatment group, and therefore were not large enough to reliably detect or exclude a beneficial or harmful effect on MI rate or other CV events. Reported but as-yet-unpublished results from the Multicenter Isradipine Diuretic Atherosclerosis Study (MIDAS), with about 450 patients in each group, showed (with a small number of total events) a trend toward a higher rate of CV events in the isradapine (a dihydropyridine) compared to the diuretic group[9].

The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT) is a large-scale, long-term randomized clinical trial to determine if the rate of coronary heart disease death or nonfatal MI is reduced by antihypertensive treatment with a CCB (amlodipine, an inherently long-acting dihydropyridine), an angiotensin-converting-enzyme inhibitor (lisinopril), or an alpha-l-blocker (doxazosin) compared to a diuretic (chlorthalidone)[10] ALLHAT is sponsored by the NHLBI, in collaboration with the Department of Veterans' Affairs and with support from the pharmaceutical industry. Enrollment of a study population of 40,000 older men and women (approximately half African American) is currently 25 percent complete. Followup is scheduled through the year 2002.

Other large trials involving CCBs are underway in Europe and elsewhere. Only two of these, centered in Scandinavia[11,12], are comparing CCBs to other classes of antihypertensive drugs and have largely enrolled their study populations. One involves shorter-acting dihydropyridine CCBs[11]; the other employs diltiazem[12]. These trials differ from ALLHAT in other important respects, such as the absence of a double-blind design.

Possible Mechanisms of Adverse Effects

There are a number of mechanisms by which CCBs could theoretically increase the risk of adverse CV outcomes in some clinical situations. The shorter-acting drugs can cause reflex sympathetic stimulation, leading to increased myocardial oxygen demand and potentiating arrythmogenesis[13]. All CCBs are known to have negative inotropic effects[14]. Some CCBs have anti-platelet actions, an effect that has generally been viewed as likely to reduce MI risk. However, this action, together with vasodilatation, could have led to the excess of hemorrhagic complications in a recent trial in cardiac surgery patients[15]. Finally, there is evidence for differential arterial vasodilation in the setting of advanced coronary artery disease leading to a redistribution of blood flow to smaller collateral vessels[16].

Conclusions

Calcium-channel blockers are used in many millions of patients in the United States and other countries. They are effective in relief of certain cardiac disorders—angina pectoris (especially variant angina) and some arrhythmias, and they are effective, well-tolerated agents for blood pressure reduction. Like most drugs, however, CCBs have multiple effects. As such, it is important to establish whether the known benefits are accompanied by significant risks, or conversely whether major morbidity and mortality are reduced. At present, the following conclusions seem prudent and consistent with available information:

1) With recognition of the likely biases of observational studies, the apparent concordance of findings from observational studies of hypertensive patients and randomized trials in primarily acute MI and unstable angina patients suggests that short-acting nifedipine should be used with great caution (if at all), especially at higher doses, in the treatment of hypertension, angina, and MI.
2) Whether this conclusion should be generalized to any other classes of CCBs, to other short-acting dihydropyridines such as isradipine, or to longer-acting dosage forms of nifedipine or other dihydropyridines is unclear. Verapamil and diltiazem were associated with significantly increased MI risk in the University of Washington case-control study in patients with hypertension, but not in other studies, including well-designed clinical trials in patients with MI, a group at high risk of recurrent MI.
3) The results of ongoing and possibly additional large-scale randomized clinical trials in people with hypertension are absolutely essential to the ultimate resolution of these extremely important issues of safety and efficacy. For example, in ALLHAT a risk as large as that seen with CCBs in the study by Psaty et al. could, if present, be detected after only a few years of followup.
4) Practitioners should be reminded that there are drugs with unequivocal survival and other benefits in the post-infarction and hypertensive settings. Certain betablockers in post-MI patients[17] are known to reduce mortality and reinfarction; in contrast, controlled trials of adequate size of CCBs have not revealed such a benefit, and there is no reason to use them in the post-infarction setting except to treat symptoms. Similarly, diuretics and beta-blockers have reduced major cardiovascular events and mortality in well-controlled trials in hypertension, while other agents have not been adequately tested, leading The Fifth Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure to recommend diuretics and beta-blockers as preferred drugs for treating hypertension[18].

Uncertainties about the choice of drugs for the treatment of hypertension should not detract from efforts to achieve optimal blood pressure control, because it is clear that lowering blood pressure is an effective strategy for preventing stroke, MI, and other CV sequelae of hypertension.

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Usha Bhuta
A-MASA President

A Success Story... AMASA 1961-71

"A primrose path leads to a bed of cactus. The comic strip PEANUTS contained a bit of philosophy for us to think about. Nancy speaking to Peanuts, says, 'You think being everage is enough. Don't you? Well it isn't! What shape would the world be in today, if everyone settled for being everage?' Peanuts answers, 'What shape is the world in today?' Let each of us today determine to leave some footprints on the sands of time, said Mrs. Ira B. Patton, WMASA President in 1965.

Let us see the footprints our leaders in those days left behind. In 1962 the Woman's Auxiliary played a keyrole in fighting against socialized medicine. The KING - ANDERSON BILL was designed to increase social security taxes to offer limited hospital and nursing home services to people over 65 years of age who had Social Security. AMA's stand was that if this bill passed, it will affect the quality of medicine. The bill was defeated by a small 52-48 margin. WMASA thanked senator Hill and Senator Sparkman for their support.

In the sixties, WAMASA was very much involved in rural health and education. Mrs. C.L. Salter (Rural Health Chairman in 1965) asked the members to thank their legislators who voted in favor of Mr. Vacca's Bill which was the inclusion of Driver Education in the curriculum in Senior High Schools. This was accomplished in the special session of the legislator held during the summer. A story about the Sabin Polio Vaccine drive was told by our 1966 State President Mrs, Clemmons, " This story started several years ago when the Alabama Power Company decided to build a big dam, which, of course, made a big lake and part of this lake is in Cullman County. Lots of people including Cullman Doctors, bought property along the beautiful shoreline. Now Southern Bell didn't have any telephones in this area and these doctors needed some form of communication with the hospital. They all ended up buying Citizen Band Radios. The doctors and their Auxiliary member wives found out that there were quite a few people who owned Citizens Band Radios for communication purposes and had formed a Citizens Band Radio Club. When we got ready to have our Sabin Polio Vaccine Drive, we made a use of this club by setting up a common post in the hospital and using this form of mobile communication to get supplies to the feeding stations." What a way to go!

In 1966 WAMASA discovered that there was a serious shortage of registered nurses. The retired nurses were urged to return to active duty and an additional 300,000 R.N.'s were needed. There was also a shortage of physicians. Medical schools needed batter facilities and equipments for scientific research. Many young people couldn't afford to go to the medical schools. WAMASA launched a campaign to encourage young people to engage in a challenging career in the field of medicine. A resolution to Establish Medical Careers Clubs in High Schools was adopted at the State WAMASA Convention. Every county in state started to raise funds so that the AMA-ERF (American Medical Association Emergency Relief Fund) money tree could grow. The idea of sending shared christmas cards came in those

days.

In the sixties the WAMASA decided that the violence was a threat to the well-being of every person in our nation. A halt in TV Screen Violence was urged. The National President asked State Auxiliaries to Launche letter-writing campaign to the presidents of national advertisers, TV networks, advertising agencies and movie producers. The 80,000 members strong national Auxiliary urged that the the national headquarters should be informed of the responses from the letter writing campaign , so that they can gauge the overall effectiveness of the Auxiliaries' efforts.

Alabama was put on the map when Mrs. John M. Chenault (Belle) of Decatur, became the 46th president of the Woman's Auxiliary to the American Medical Association in 1969. By this time there were 90,000 members nationwide. Our hats off to those leaders.

To be continued.....

INFORMATION FOR AUTHORS CONCERNING MANUSCRIPTS

Manuscripts from member physicians should be typewritten, double spaced on white paper 1-1/2 x 11 inches with adequate margins. Two copies should be submitted. Authority for approval of all contributions rests with the Editor. *Alabama Medicine* reserves the right to edit any material submitted. The publishers accept no responsibility for opinions expressed by contributors.

Style: The first page should list title (please be brief), the author (or authors), degrees, and any institutional or other credits. Bibliographies must contain, in the order given: Name of author, title of article, name of periodicals with volume, page, month – day of month if weekly – and year. Number should be limited to absolute minimum. References should be numbered consecutively in order in which they appear in the text.

The Stylebook/Editorial Manual, published by the AMA, is the general reference for questions of style. It is particularly useful in the proper presentation of data. When conflicts occur between usage, etc., by an author and the stylebook, these will be resolved in favor of the author if his method is persuasive and logical.

Helpful to many writers is *The Elements of Style* by William Strunk, Jr., and E.B. White, which emphasizes brevity, vigor and clarity.

Final authority on grammar is Webster's *New International,* Unabridged, Second Edition.

Length of Articles: Articles should not exceed 3,000 words (approximately 3-4 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

Illustrations: Illustrations should be numbered consecutively and indicated in the text. The number, indication of the top, and the author's name should be attached to the back of each illustration. Legend should be typed, numbered, and attached to each illustration. Photographs should be clear and distinct; drawings should be made in black ink on white paper. For photographs, glossy prints are preferred.

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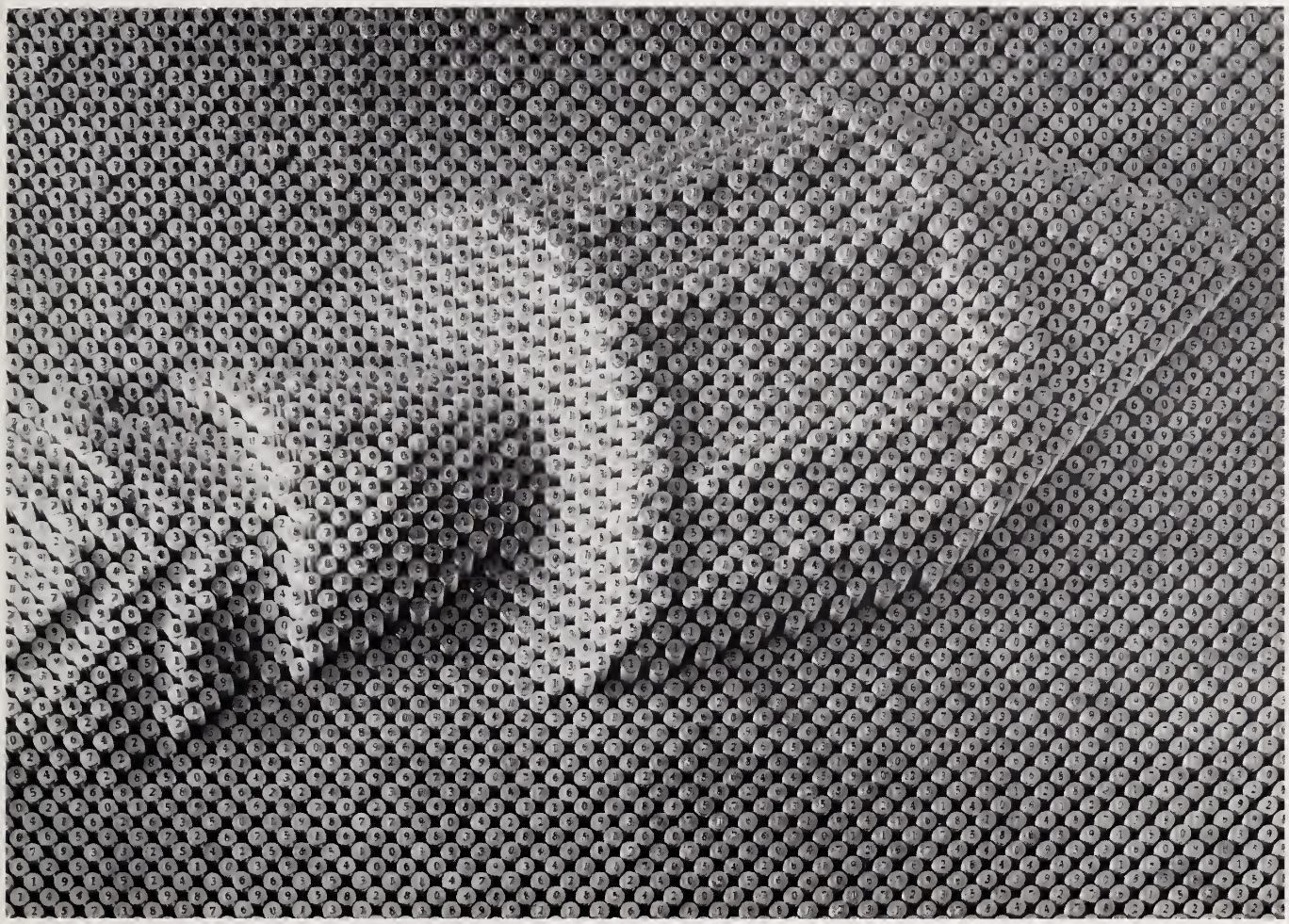

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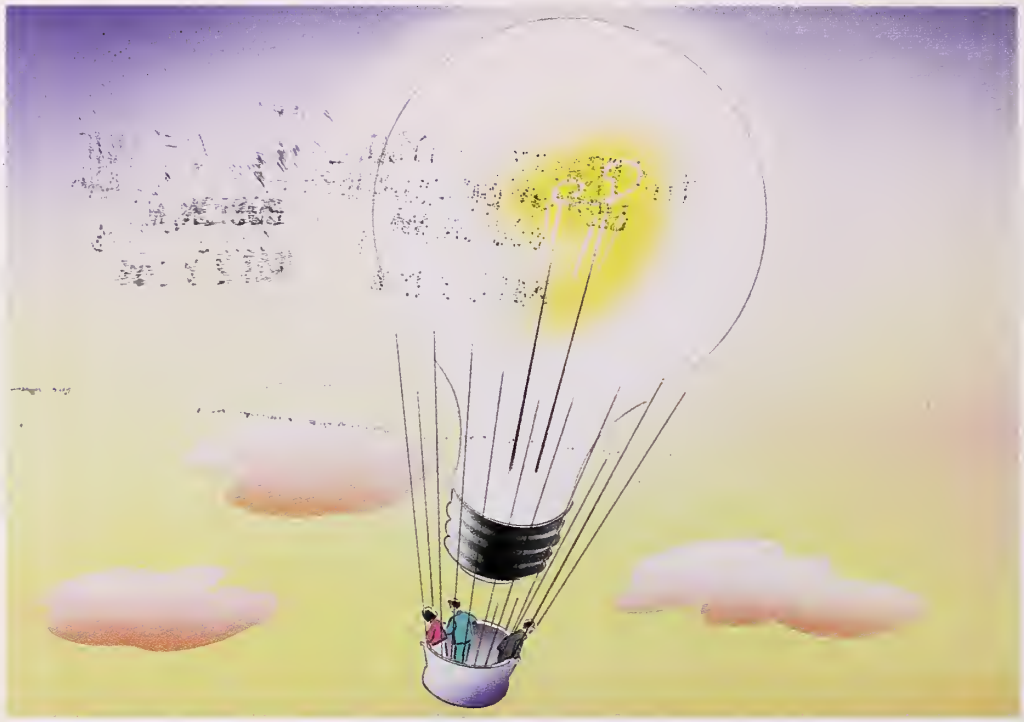

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Privacy and Computerized Patient Records

"The issue of privacy and confidentiality of patient care records transcends the setting of our technological age with its electronic information systems, and indeed the value of confidentiality was already recognized in antiquity…."

– page 29

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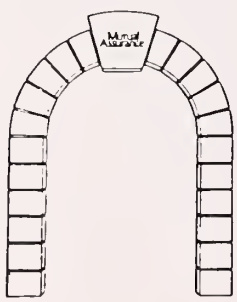

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EXECUTIVE DIRECTOR

S. Lon Conner
Executive Director, MASA

The Year of Discontent

By any measure, 1995 was a year of discontent for American medicine, buffeted as it was by the winds of change that seemed to be blowing from every point of the compass.

When MASA surveyed the membership early in the year, the unsurprising finding was that managed care was uppermost in the minds of many Alabama physicians. And "managed care" became a kind of *omnium gatherum*, a rubric for all your woes, which seemed to come, in Shakespeare's words, "not as single spies but in battalions."

Feeding physicians' fears that they were losing control of their profession were the accounts of vast hordes of cash being socked away by the managed care giants. You didn't need a financial analyst to tell you that all this money had to come from somewhere, or that the most probable source was a sweeping subtraction from patient care.

The managed care giants responded to such charges with the now familiar refrain that they had simply introduced efficiencies into what had been a profligate system, in which neither the buyer nor the seller of services was constrained by cost considerations.

But doctors and patients alike saw too much evidence of skimping on necessary services for this to be credible. Certainly there has been waste, but nothing of the magnitude that would account for such profits.

Even so, at year's end there seemed to be among many physicians and patients a calm acceptance of the fact that retrenchments were inevitable in a system that had simply become too costly to be sustainable – either by the nation in Medicare/Medicaid, or by employers and employees in the private sector.

What most doctors as well as their patients rightly feared was that the pendulum would swing much too far and wreak great damage on the finest health care system in the world.

Although I share many of these apprehensions, I don't believe the sky is falling. It may seem a simplistic faith, but I have developed an unshakable confidence in the collective wisdom and determination of physicians to protect and preserve their ancient honorable calling. While I know many of you have taken some heavy hits to your autonomy, you have the public behind you in your resolve not to forfeit medical judgment and skills to the reign of bean counters whose dedication to patient care is corrupted by corporate greed.

As 1995 began, the public was thoroughly confused; elements of it were being seduced by the siren song of the medical marketers that they could have more for less – the ages-old shill of the sharp operator and the huckster. As the year ended there was mounting evidence the vast majority of Americans were returning to their senses and to their historic faith in their doctor and his/her dedication to their welfare.

It is my hope, and my belief, that 1996 will see a quiet return to sanity. That does not mean the cost of medical care will resume the alarming escalation of the 80s and early 90s, but that the country will turn to a rational reaffirmation of the physician as the medical decision-maker, not an anonymous review clerk looking at software designed less in the patient's interest than in the fast-buck interests of the company's bottom line.

In fact, I believe the clouds have already begun to break and that 1996 will see at least a partial clearing. A year hence I expect to see a lot more blue sky over the house of medicine.

Certainly that is my hope for you and your patients.

PRESIDENT'S PAGE

C. Neal Canup, M.D.
President, MASA

Who Is Telling The Truth?

It has become more difficult in recent years for me to know whom to believe. Probably a more correct question would be, who is telling the truth in this society? Has truth, along with other great ideas, such as justice, become only a concept to be compromised? We have recently discussed in another article the lack of correlation between our legal system and justice. The willingness to compromise the truth has been couched in the interpretation of information based upon our own bias or political beliefs. Also, the concept that there is no absolute truth and that all truth is relative. I, for one, still believe that there is information and facts, given to reasonable people, that a consensus of truth exists.

In government, the same information and facts always produce two or more statements of the truth. Since government has become so pervasive in all our lives, it seems to me that someone in government should be believable. Example: At this writing the Budget battle is raging (Medicare). The Republicans say that Medicare expenditures will increase from $4,900 per person to $7,100 per person in the next seven years. The President says that it is a cut.

Now who is telling the truth? Is giving part of the information on an issue truthful? Is placing emphasis in the wrong place telling the truth? Is following party lines telling the truth? Is using fear, race against race, class against class, being honest and truthful? If the number one person in government thinks getting elected is more important than being truthful, then what can we expect from all other levels of government?

One would think that, surely, the press would be truthful, that they would not allow elected officials to avoid telling the truth. My experience is that the most technical type information is always assigned to the most inexperienced reporter, that stardom is more important to achieve than honesty and respect. Also, that their own political persuasion takes precedent over fact. The bias of the news writer is read by hundreds of newspaper, radio and TV reporters all over the country and read as being the truth.

The local newspaper in my hometown, Anniston, has an editorial board and publisher that consider themselves as liberal Democrats. I believe the majority of their readers consider them as more radical left than Senator Helms is radical right. Their editorials on almost any subject are so predictable that given the subject hundreds of their readers could write their editorial. Their excuse for not making sure what they print and say is true, internally policing themselves, or having any form of quality assurance, is that they do what they do in public and that the public will judge it.

If they print false or untrue information they hide behind the First Amendment or the law that protects them if no malice is intended. I believe that in a free society there must be a free press. There are many reasons for this and most are obvious. The threat against the press in losing their freedom is from within the press itself, where profit, stardom and journalistic laziness rule. If there is a threat to the free press it is from no quality control.

The next issue is economics. This seems to be an area in our society where the lack of or unavailability of information, or the knowledge of how to use the available information, makes it impossible to know what the truth is. I want to share with you a story I heard about President Harry S. Truman when he was trying to come to some conclusion about an economic issue on which he had to make a decision. He had discussed the issue with numerous economists and finally requested of his chief of staff that he bring in a one-armed economist. His chief of staff

was a bit puzzled and asked why he needed a one-armed economist? Truman is said to have remarked, "Every economist that I have talked to has said, on the one hand it is this way, on the other hand it is that way. I would like to talk with an economist that only has one hand so that I can get a consensus."

Another area that one would think the truth would be embraced is education. It seems that even here being politically correct has become more important or more valuable than the truth. I recently read an article entitled, Telling The Truth, by Lynn D. Chaney. The article was recently reviewed in *Reader's Digest* and in the review he recounts that a mathematics teacher has stated that a common classroom exercise of totaling a grocery bill to practice addition should be avoided because it teaches students that paying for food is natural.

A textbook writer tells teachers to be skeptical about scientific accounts of how humans first arrived in North America because the science reflects logic instead of Indian mythical accounts. A New Jersey teacher explains to her fourth grader students that Christopher Columbus was not an heroic explorer who discovered America, he was a murderer who stole it. An Afro-centric curriculum claims that the ancient Egyptians flew in gliders.

Constantly, our education system continues to present false versions of reality; we are being told in the universities and other systems of education that we are foolish to be concerned with the truth, that it is all irrelevant.

Last year, curators at the Smithsonian Institute attempted to mount an exhibit suggesting the United States was the aggressor in World War II. The idea that there are no enduring truths, only politically useful notions with no over-shadowing principles, only the interest of the moment, is invading our culture.

Hopefully, there are yet many people in this country who will not ignore the evidence their reasoning provides.

One would think that the institution of religion would surely be a place where truth was spoken. For the most part, I believe, they are sincere, (no intention to deceive), but consider, if you would, what has become the norm for countries to claim divine support for their wars. Obviously someone is wrong. The reason I mention religion at all is not to be critical, but to point out that on any issue there are different religious opinions. Example:

In Sandberg's description of Lincoln discussing issues relating to the Emancipation Proclamation, Lincoln is said to have made the statement: "The subject (providence) is one upon which I have thought much during the past weeks and I might even say for months, I am approached with the most opposite opinions and advice, and that by religious men, who are equally certain that they represent the divine will. I am sure that either the one, or the other class is mistaken in their belief, and perhaps in some respects, both. I hope it will not be considered irreverent of me to say that if it is probable that God would reveal His will to others on a point so connected with my duty, it might be supposed the He would reveal it directly to me. For, unless I am more deceived in myself that I often am, it is my earnest desire to know the will of providence in this matter, and if I can learn what it is, I will do it. These are not, however, the days of miracles and I suppose it will be granted I am not to expect a direct revelation. I must study the plain physical facts of the case, ascertain what is possible, and learn what appears to be wise and right. The subject is difficult and good men do not agree."

What of our own profession, do we tell the truth, or do the truth? We have many examples of not doing the truth. Do some of us give treatments that are not justified? Do some of us do too many tests? Do some of us do surgery too quickly? Have some of us put profit above a higher moral purpose? Of course, some of us have, and do, the above. We must be busy about correcting all these situations, and I would also point out that, at the same time, we are the most policed profession, by ourselves and by outsiders.

The legal system is noted (we have previously discussed this) to value a process more than content. Obviously, when one does that, one does not have a great deal of respect for the truth. Regardless of what one might think after reading this article, I am usually much more positive in attitude than negative, but my points are not about being negative, or for the sake of being negative, it is about society. Can a country be free for very long if its institutions are not believable?

Can individuals be expected to be responsible if they are not hearing the truth? What happens to the values that allow us to live together peacefully when truth is considered to be situational or "just for the moment"? I do believe that, in most cases, there is evidence and enough facts to discern a consensus of truth.

It is obvious, most of this article is in the form of questions, and not answers. I can't find the answers. Again, I ask the opening question, Whom do you believe in this society?

What is the use of the History of Medicine?*

Robin Price, M.A., A.L.A.†

What is the use of the history of medicine? ***WHAT*** *is the use of the history of medicine? What is the* ***USE*** *of the history of medicine? What* ***IS*** *the use of the history of medicine?*

This is the question—with its different and ever nastier emphases that I get final emphasis particularly so, as you might expect—not least because in earlier days I had no convincing answer. To say, as many of us might have done thirty years ago, that it is fascinating, or that it satisfies our curiosity, may be truthful but that answer is neither intellectually satisfying, nor educationally valid, nor spiritually fulfilling. I aim in this talk to suggest there is a very great deal of use in the history of medicine, even if that great deal can't be quantified—especially because it can't be quantified by the Mr. Gradgrinds of the late 20th century, inheritors as we unfortunates are of 19th century utilitarianism at its most grinding and most bleak and most linear. How true to us, to you and me, is the savage irony of Charles Dickens' *Hard Times*.

In the second part of my talk I shall go on to show how the history of medicine is being developed in the United Kingdom and in fact how it is taking advantage of the new developments in the undergraduate medical curriculum as recommended by the General Medical Council, the regulating body of medicine in the United Kingdom. I offer it as a case study, unique to the United Kingdom, in the hope that some of the approaches will be applicable, if only by way of inspiration, to other enthusiasts to you—for this real adjunct to real medical learning in its fullest extent. It may perhaps come at an opportune time on the recent formation of the *Alabama History of Medicine and Science Council*. And it is increasingly evident in my travels and discussions that the idea of history as a special tool for medical education is daily gaining ground.

Well why do we do it?

Many of you in this audience will have far more practical and therapeutical ideas than I—a non-medic—can ever have to the question I have had put to me, and which I now put to you. And I refer you for those specialist practical therapeutic answers to yourselves, the well-informed and perceptive physician, surgeon or general practitioner[1]. For my answer, the answer of a layman who has been much engaged in it for nearly thirty years, I confine myself to the more conceptual answers to the question. And in making my points I shall attempt to rise the graduated scale of my answers from the sensational to the interpretive—or, if you prefer alchemical symbols, from the coarse to the fine. Every category in this world is of its nature a human artefact and therefore not one of the categories I happen to choose can be exclusive of another—nor indeed should it be. Thus, please look out for and recognize reflections, counter-reflections and resonances. How else, in an orbital, unitary, and compact material world?

We start with the most mundane uses, as the sensational, which includes the "innit awfill" brigade—or the American equivalent of that rather dire English phrase. We all do it in our different ways, so we shouldn't blame the cheapjack Press or its readers too much. Sensation includes attention-seeking, fear, wonder, awe and all those boring and predictable excitements. Alas! none of these emotions is useful, all of them are coarse, and they are perfectly useless to our purpose, if momentarily entertaining to those who indulge in them.

Curiosity enters here (as everywhere else in the human experience), as just distinguishable from sensationalism. At worst it is idle and particulate, and once satisfied, the object of it is soon forgotten. At best, it is the engine of much human endeavor, from high to low. Whose perceptions are not changed by Einstein's compressed equation, and who is not fascinated and a little enlightened also to know the contents of the salve-pot in the surgeon's cabin of the *Mary Rose?* As you may recall Henry VIII's great warship, the very latest thing in 16th century naval technology and firepower, and thus top-heavy, sank in the Solent in 1545 and was raised to the surface in 1982 after 437 years under the sea. In that wreck, amongst much else, was the complete equipment of the surgeon's cabin, including the surgeon's professional cap, his musical instruments—possibly used in therapy—and a series of medicament containers, including that salve-pot. Fascinating and wonderful after all those years of sea-burial, but is it really useful? At the highest level, therefore, perception; at the lowest, the trivial sparkle of entertainment.

We pass to the linear use, or what you might call "this will be a useful prologue to my M.D. thesis." You have done it—my friends have done it and, well, we all do it. The said prologue is often unrelated (but

*Presented as a part of the Reynolds Historical Library Lecture Series at The University of Alahama at Birmingham, May 9, 1995. A version of the Presidential Address to the Open Section of The Royal Society of Medicine, London, *Journal of the RSM.*, Volume 88, May 1995. Reprints can be obtained from S.R. Hill, Jr., M.D., HJH 104 UAB, 1825 University Blvd. Birmingham, AL 35294-2010

†Deputy Lihrarian of The Wellcome Institute for the History of Medicine Lihrary, London, and Curator of its American Collections. President (1992)-1994) Open Section of The Royal Society of Medicine, Honorary Secretary of the Harveian Society of London (1994), Director of the Society of Apothecaries Diploma Course in the History of Medicine, Visiting Lecturer, Reynolds Historical Lihrary, The University of Alahama at Birmingham, Birmingham, Alahama.

bless us, not absolutely always) to the main argument, and recounted in terms of a medical/scientific/clinical "first"; or, with engagingly frank ahistoricity, how we got to the great and wonderful present that is, of course, the subject of my thesis, the Whig view—the determinist view—of history. It is not at all useful except that a spadeful of diligent dates satisfies the examiner and helps us get the M.D. At least it got the examiner's attention and extracted a few more marks for diligence, if not much for historical perspective.

We pass to the **disciplinary** use—or discipline for the sake of it. From that point of view, medical history is as acceptable as any other intellectual discipline, and it becomes increasingly acceptable as it gets increasingly professional—and of course increasingly linear, decreasingly exploratory, and in turn, with increasing canalisation, even more suitable for such useless and non-developmental disciplinary displays. This is of course somewhat of a travesty and by no means true within the Wellcome enterprise to which I happen to belong, but it is an ever-present danger and risk with anything that becomes institutionalised. Let theology and the law be our dreadful warnings. Definition—that self-destructive goal of the linear and the limited—can be death.

Next, the **interdisciplinary** use, a fashionable and evolutionarily useful mode of study these past 25 years. Like geography, the history of medicine is one of the few naturally interdisciplinary subjects, since medicine cannot properly be studied without knowledge of a vast cohort of such subjects as mainstream political, social, cultural and economic history, population and demographic studies, inner religious understanding and ethical knowledge, psychological studies, anthoropological understanding (and all history is to some extent anthropological), to say nothing of such specifically medical studies as epidemiology, biomedical and clinical studies, and the vast and intricate array of medical specialities. The rediscovery of the jointure, indeed the unity, of all disciplinary studies has been a major conceptural advance of our lifetimes. An advance which is likely to tread into yet unexplored regions with the growth of unstructured access to knowledge through widely available automated systems. Internet may well change radically our whole approach to knowledge and learning.

Next, the **experimental** use, a more specialist approach which we might now call the history of biomedical research; certainly in our own times it often has a physiological basis. With this category we approach the area of Kuhnian paradigm change through the examination of the hidden nature of scientific, social and conceptural process. The first, now to use very crude, and probably fortuitous, experiments carried out by James Lind in the middle of the 18th century on anti-scorbutics, presaged not only the eventual (and much later) mandatory adoption of lemon-juice by the Royal Navy—and thus the triumphant British blockade of the continental ports during the Napoleonic wars. But, much more massively and permanently, this and other such quasi-physiological experiments changed the attitude to the received wisdom of the time and the approach to the acquisition of knowledge,—as also to the possibilities of the understanding and control of Nature—that goal of the Enlightenment—and foreshadowed new ways of making challenges in the future to the dominance of that received wisdom. Ways indeed which led to the increasingly well-grounded faith in Science which became established during the 1860s a paradigm from whose absolute dominance some would say we too, in our turn, have to be delivered. What, history asks us, is our next creative step?

So, we turn to the **assumptional** use, or observing how we human beings have behaved in the past. Recognizing through our studies of the past the limitations of human understanding, predicated as it often is on false assumptions, blind alleys, incomplete knowledge, unrelated 'facts' and incorrect aetiology, should, and often will, by insight, teach us the humility of thinking relatively. We are not on the pinnacle of time just as our forebears were not—and we never will be. There is always more to learn. Think only—and very simply—of the laser and the knife. By the standard of future minimally invasive and non-invasive surgery the crude scalpel-and-knife stuff of yesterday and today is going to look as outdated and barbarous as the surgical butchery—wonderfully rapid and skillful though it became—of the 18th and 19th centuries. And how rapidly and on how many fronts do we now progress!

Next, the **predicational** use, or "this is how we are because of the past." We are products of the past, so we still think and act like our forebears, however much we may like to flatter ourselves that we don't. For instance, we tend to think in terms of thesis and antithesis. a mode bequeathed to us by the very dead (but in us how dead?) mediaeval schoolmen—once a useful and very necessary mode of pounding at theological and "scientific" truth. Thus attack and counterattack. We see this daily, and there is little need for an obvious example, implicit in the conventional oppositional modes of Congress, the law, and the altogether sacred game of baseball—and of course cricket. A less obvious but irritating example, conceived as so often by the ever-blessed and simplistic—and truly awfill—British Press, are the reports that So-and-So is "fighting for his life" in an intensive care unit. This is patent nonsense because he or she is usually unconscious and the medical staff are doing the "fighting" for him or her, and admirably too. And, be it added, the regular medicine that is fighting for them is one form or another of allopathy, which sets the treatment in opposition to the presenting condition. This admirable method, derived from the developed experimental method out of the model of James Lind, John Hunter, et al in the 18th century and the succeeding biomedical advances of the 19th and 20th centuries but still based on mediaeval intellectual skills in logic, is often, and very often and often, thank heaven, predictably—physically curative; and

is less often but disturbingly likely, to create side-effects and to compound the complexities of the original condition. Excellent though this approach often is, does it have to be our sole approach? But then the approach itself is predicated on another assumption of medicine—that it treats only when the condition has manifested, rather than by inhibiting the originating dynamic, whether within the patient or outside him, in his genetic constitution, in the biosphere, his work conditions, his psychological imbalance, his spiritual condition or the like. You will recall that Lewis Carroll's White Queen screamed before she was hurt. More such reverse thought and action, so admirably illustrated in that truly marvellous and thought-provoking work *Through the Looking Glass* would benefit us all.

Now I turn to the **directional** use, or the tracks we didn't go down. Why didn't we go down them? Could a return to look at them again be useful? One of the most interesting and developmental phases of the history of medicine in relatively modern times was the therapeutic nihilism of the 1840s. We should not forget that not-knowing is as valuable as knowing. The wisest physicians of that—and there were giants among them, like the highly perceptive Sir John Forbes who founded and single-handedly ran the *British and Foreign Medical Review* from 1836 to 1847—took the view that much contemporary therapy was useless, that much contemporary drug-giving was poisonous or at best of unknown efficacy, and that nature had to be encouraged rather than dragooned to throw off the morbific condition. That, in fact, waiting on the *vis medicatrix naturae*—the healing power of nature—was the most creative inaction that the physician could undertake. From this creative nihilism—in hindsight, this creative gap for the growth of a greater awareness—rose a multitude of therapies, not least the short-lived and pretentiously named *Chrono-thermalism,* using the limited clinical measurements then available. As also the longer-lived, highly exotic, attention-giving and sometimes surprisingly effective water-cure, whose heyday in England lasted the full generation from 1840 to 1870. And, very much more importantly, as I mentioned earlier, the scientific revolution in medicine in whose afterglow we still have our being.

But, in terms of direction, and even more importantly, where are we going today? Are we wholly satisfied with regular medicine and its oppositional thrust? Would we be cured better (and would we to some extent cease to need to be cured at all?) by a more feminine, intuitive and less material and linear approach to the body-mind-spirit continuum of the whole human being? You will understand that in asking these questions of our own time implicit in the study of the history of medicine I am by no means impugning the biomedicine, clinical medicine and surgery of our day—indeed, I hold modern scientific Medicine, as doubtless we all do, in greatest honour, respect and gratitude—but I do ask whether it is not possible to view the somewhat desiccated analytic mode of either/or as an adjuvant part of the accretive and acceptive mode—thus reopening the mind to new possibilities. We need to associate and affirm rather than to dissociate, discard, and deny. To escape, in fact, from the mediaeval schoolman still within us.

I turn to the recognition of **credulity**. You will think it high time I touched on this, particularly after my last unacceptable observations. Well, yes, a crude credulity has existed, and in the face of fear and the unknown, and with the continuance of the undifferentiated human desire for the marvellous and for the panacea, it does and probably always will flourish, sometimes dangerously, mostly harmlessly. At best it pleases, and in pleasing it might cure a functional disorder. We all recall and love the expensive attractions of Dr. James Graham's Celestial Bed, housed first in the Adelphi off the Strand and then in London's Pall Mall from 1780. The bed was surrounded by palatial mirrors, powered by "15 cwt of compound magnets" and "supported by forty pillars of brilliant glass of the most exquisite workmanship, in vividly variegated colors," whose clients were encouraged by the "Goddess of Health" who was said (probably untruly) to have been Emma, later Lady Hamilton, the mistress of Horatio Nelson. The bed was held to confer magically powerful benefits on those who slept in it, a belief doubtless reinforced by the huge fees of £50.00 per night demanded for its services[2]. It is ironic—if not very charitable—to record that the said Doctor died in poverty aged 52, unsupported by his much vaunted "Elixir of Life," or by his expensive whole-body mudpacks brought down to London from Hampstead Health.

Perhaps fewer of us know of Lionel Lockyer's *Piluladiis solis extractae*—pills extracted from the rays of the sun—certainly less harmful than other official remedies, as evidenced by the painful and protracted deathbed of Charles II of England in the 17th century and the sickbed of Louis XIV of France in the early 18th century, each of whom had the extreme ill-fortune to have attracted the best medical advice of their time. That Charles had the courtesy to apologize for the length of his death is a tribute to an extraordinary fortitude in the face of the huge medical odds stacked against him. The problem, as always, is to discriminate between the official but spurious and that which seems spurious only because it is unofficial, unrecognished. An exercise for the alert, the experimental, and the well-informed in history, and for those few free spirits in the past like Ambroise Paré in sixteenth century France who can absent themselves—even if only momentarily—f rom their culture.

I turn thus to the **anthropological** use, or, the peculiar things "natives" do, and why. More percipiently, by looking at other societies we can reflect more usefully on ourselves within our culture in our times. "The past is another country, they do things differently there," in the familiar but perhaps not entirely hackneyed words of L.P. Hartley. The natives are different in mode, almost certainly, but are they that different in motivation? The natives are us, and

we too do some pretty peculiar things—in medicine, as in almost anything else. Why, for instance, do we medicalize childbirth, to a certain if declining extent still overfactualize our students to the point of disenchantment with medicine, isolate the old so that they lose stimulation? We do not have to do these things, as indeed we now begin to realize. More practically and quite as imaginatively, we can use medical anthropology, in part derived from an historical understanding, to act as the intelligent interface between doctor and patient to effect communication in places where the cultural assumptions of the two are initially wholly disparate. This will apply especially to the more obvious and overt cultural dissonances of say, English male doctor/Moslem female patient, or Hindu doctor/Caribbean patient. You will be aware of your own cultural dissonances much more than I can be, and examples will readily occur to you. My contention is that what could be a non-interpretive confrontation can with such insights become an area of transformation. And among the culturally informed it often does. History, by perception of cultural differences in the past, can mediate this interpretive understanding within the circumstances of today.

I now turn appropriately to **flexibility**, that is, the faculty of staying alert to the possibility and potentiality of change, and to the perception that things may not be as our cultural filter has predicted. Flexibility links with almost all we have said before, particularly in relation to the experimental—that which may trigger a major intellectual and cultural change—and to the predicational—which is, as I have indicated, the context and product of a (temporary) cultural balance. It is in fact an openness to discussion and an ability to throw preconceptions to the winds in the light of new experience and new facts and ways of looking at them, which is exactly what the educator—literally, the "leader forth"—aims to do.

What therefore are we in the United Kingdom doing to intensify the use of the history of medicine in the expansion of mind of our future medicine men and medicine women, whether general practitioners, physicians, surgeons, the numerous specialists of all kinds, nurses and all professions related to medicine? The use of history in medical education, and particularly in undergraduate medical education, is of paramount importance because, at best, it does all the things I have referred to, and more, it can expand the mind-set and the personality of the junior practitioner studying it, an expansion which can stay with him for the rest of his career. Significantly, in Britain it is very often the more intelligent and conceptually open student who chooses to spend his intercalated and highly specialized BSc year on history— primarily at the Wellcome Institute. Since nearly all his education has been the milling of quantities of facts (but

what in the view of history is a fact?) his first step in studying the history of medicine is to realize that he has entered a new and far more open conceptual world. Once that step is passed, a new relativity, dangerous but creative, opens before him. Aware of the past and of his precarious position within the continuum of time, he is now in a position to experiment, to enquire and to serve in a new freedom which the old didactic structure of presentation and all its wonders would not allow. Whether the student ever returns to history is of not much importance. The change is done, perception restored, the catalyst removed.

In Britain, such a genuine education may well become more widely available through the vigorous initiative of the General Medical Council, the statutory medical licensing authority ultimately responsible for the quality of medical education throughout Great Britain and Northern Ireland. Its recommendations on undergraduate medical education entitled *Tomorrow's Doctors* (1993), were arrived at after careful three-year consultations with all of the United Kingdom's medical schools. The recommendations propose, in a pattern which will be familiar to you, but whose implementations have their own British flavor and balance, that two-thirds of students' time will be devoted to the core bio-medical sciences and clinical skills. The remaining one-third will be given over what has been called with imagination, "intellectual space"—that is, to a choice from some 30 to 40 special study modules or special projects offered by each medical school. The General Medical Council makes it totally clear that it does not want uniformity, but rather variety within an overall pattern. A variation of species in medical education, in other words, is much to be encouraged according to the nature, style and historical character of each medical school. In contemporary economically-correct terminology, the new medical education is to be demand-led, not supply-led; and the major construct is to be thematic in order to enlist the continuing attention and participation of the students,

It is of course highly desirable that at least one of these special study modules or special projects in each medical school will be on the history of medicine, as indeed is encouraged by the General Medical Council; and some of us, as I shall relate a little later, have been much concerned to ensure that the history of medicine enters, as a natural part of the curriculum in an examinable form so far as that is possible, and that it is done while the curriculum in an examinable form so far as that is possible, and that it is done while the curriculum as a whole is yet in a formative stage. Such an entry of history into the medical curriculum, even in an optional form, together with the continuing intercalated BSc degree in the history of medicine at a slightly later stage in the course, would provide a wonderful opportunity for a deeper understanding of medicine to gain ground at an early stage in the medical undergraduate's career—and, as this talk tries to suggest, it could bring great benefits in enlargement of mind and openness to experience of the practitioner.

Allied to these new perceptions from the controlling body of medicine is the real and practical interest of the British universities in acquiring expertise in the history of medicine, in part for students of the humanities, in part for their medical undergraduates. That the energy and resources devoted to history for medical undergraduates will increase is a theme of this talk and it will, as I will show, come slowly but steadily as a result of pressures arising from within medicine itself and within its institutions, as well as from the increasing input of the Wellcome Trust within the universities. We are on a rising curve.

Not unlike the Hannah Chairs in Ontario, Canada, there are in the United Kingdom and there have been for some time, five well-established Wellcome Units in the history of medicine, at University College London (virtually the Wellcome Institute), Oxford, Cambridge, Manchester and Glasgow; and, where three years ago there were none, there are now four full Professors in the subject, as well as several Readers—an English term to denote those immediately below the departmental Professor. Since October 1990 a new scheme funded by the Wellcome Trust has appointed some seventeen University Award Holders to appropriate Faculties throughout the United Kingdom. To these may well be added in due course some six further universities which have recently applied for such Wellcome Trust Awards. A high tally indeed, including nearly all those universities with medical schools in the United Kingdom. These University Awards are made to history, philosophy, cultural studies, sociology and local studies faculties, with Wellcome Trust funding on a diminishing basis for an established scholar over a period of five years—after which, the host university is contracted to take up the entire funding of the post. It is now for the medical schools in those Universities to be encouraged to recognize fully the need for history within the total context of the new humane medical curriculum, and to take up what is so usefully an offer.

This is indeed a victory, and the idea moves nearer yet to its time. But it is still only a part victory, and further pressure needs to be applied to the medical schools to persuade them that it is in their best interests and in the best interests of their students and the future of medical practice as a whole to include the history of medicine at least as an option within the undergraduate curriculum. It is here that our characteristically multi-layered British non-system comes into play. You will all know the British penchant for retaining archeological layers of its past in its present life. The monarchy, parliament, the law, all enshrine elaborate and often seemingly archaic and arcane rituals which frequently puzzle those who are not of the British tribe and make others think that we are rather more antique than we really are. These customs are in fact icons of an understanding that the past should be honoured and its inner meaning understood, though not by any means totally preserved in amber. The secret of the success of our

democracies of common descent is that we keep the form and change its content.

In the same way and for the same reasons of evolution, the Worshipful Society of Apothecaries of London—a title to roll joyously off the tongue—strongly retains its ancient customs and its medical function in the late 20th century. In doing so it has totally changed its mode of action, much to the benefit of medical history. But first I must briefly describe what the Society is. Founded in 1617 by royal charter of King James I of England (and VI of Scotland) at the request of his Consort's Apothecary, Gideon De Laune, it was originally required to examine and license Apothecaries practicing within six miles of the City of London. In 1815, two centuries later, when the apothecaries were becoming what we now call general practitioners, the Society was empowered by Parliament to examine and licence in medicine. This licence was much sought after and greatly respected, and the same licence continued after 1858 when a further Act set up the General Medical Council and greatly increased the number of bodies licenced to educate, examine and licence future doctors, in particular general practitioners.

The Society retains its powers of examination and licence to this day, and the fact that one recent visitation by the General Medical Council it has proved itself more than capable of carrying out these functions fully and responsibly, lends all the more credit to the many diplomas in medicine and subjects closely related to medicine it sets up and examines. All of these are in areas which are rarely if at all available for examination elsewhere in the United Kingdom, since the Society particularly seeks to act as a catalyst for future creative reaction. Among these are catastrophe medicine, medical jurisprudence, sports medicine and the like; but there are also those subjects which are both taught and examined by its Faculty of the History and Philosophy of Medicine and Pharmacy—that is, its Diplomas in the History of Medicine (DHMASA) and the Philosophy of Medicine (DPMSA), which run side by side, since it was recognished from the creation of the Faculty in 1959 that the two subjects are closely related.

Since 1970 the same Faculty has set up Lecturers in the History of Medicine in the London medical schools, and their number is now being greatly expanded to include as many of the other medical schools in the United Kingdom as there are Lecturers capable and available to fill them. The role of the Lecturers is being revised and the whole enterprise re-invigorated by new ideas driven by the Lecturers themselves, not least in the direction of special study modules in history related to the nature of each university, but also in the provision of introductory courses, the foundation of undergraduate history of medicine societies, and short courses and, as I relate below, visits to place of medico-historical interest.

Among the many facilities for medical history is the idea originating about five years ago from the Director of the Wellcome Trust of a mini-course for first and second year medical undergraduates of London University. The course, run by the Society of Apothecaries and funded by the Wellcome Trust at no charge to the students, takes three days in the Easter vacation and offers talks—not formal lectures—and videos in the mornings and visits by bus to places in London of medico-historical interest in the afternoons. For that reason, places on the course are necessarily limited, but they are enthusiastically sought by the Deans for their students, and by the students for themselves. It has the unlooked-for advantage of picking up students for the Wellcome BSc course in the history of medicine and for the Society of Apothecaries Diploma course in the history of medicine, but its prime function is to place students in a very simple and accessible way within their historical and institutional context, which indeed the students claim with enthusiasm to be true. It perhaps an indictment of the present state of medical education that they also tell me that no one else has ever done this for them and that it gives them an entirely new perspective on their work and of their understanding of their place within their future profession. This is a small and seeding project which might, allowing for other conditions, be adopted elsewhere. And why not in the United States?

For clarification, I should add that the Society of Apothecaries Diploma Course in the history of medicine whose existence I touched on just now, is available to all medical graduates and to all those with an equivalent or professional qualification in whatever relevant faculty. The Diploma Course attracts some 20-50 students each year from all over the country who range in even age profile from 22 to 72. And we regularly receive enquires from abroad, including the USA, for teaching and examining the course in those countries. But, interestingly, the same problems surprisingly and rather touchingly arise with those in mid-career as with the undergraduates on the more conventional students' BSc course. One-third of the way through the course "Why am I studying the history of medicine?" is an anguished cry from the heart of those raised in the land of linear thought-police, an anguish which the course does indeed assuage, and which these and the future initiatives in the history of medicine I have touched on should do much more to ameliorate. I am reminded most vividly of a poignant message to us all on a recent tombstone in a remote village churchyard in Suffolk, England, written by one who remained, and who, beyond the grave, must yet remain, free of the usual torpors and trammels of human understanding—

This alone is to be feared
The closed mind
The Sleeping imagination
The death of the spirit

And perhaps it is here, on these high and—I hope—not too solemn notes that I draw to a close. In sum, we have worked in Britain for some 25 years from a base line of nothing to provide a sure founda-

tion for the future expansion of the history of medicine and to make it available to undergraduates. That expansion, with the total revision of medical education, is now upon us, and we are seizing that opportunity in whatever way we can. I, in my turn—and this is in part the purpose of presenting this talk—ask what is happening in this University to open the mind of the medical student to his innate freedom?—to that seamless robe (to quote from Harrison) of "technical skill, scientific knowledge, and human understanding" which is the highest expression of medicine.

But before you can answer my question you in your turn will ask, what is the TAO of medical history?—and you will see that curiosity somethings does have its uses—TAO in the philosophy of Lao-Tzu, the Chinese sage of the 6th century BC, means somethings like "The Way in Harmony with the Universe." Since that Way in medicine has been implicit in all that I have said, and since on both sides of the Atlantic we seem to have been co-existing with an idea that has reached its time, I shall leave that thought and this reinvigorated enterprise to glimmer on the path before you.

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Legislating Medical Ethics

*Ernest S. Campbell, M.D.**

Doctors have been caught right in the middle of an ongoing debate (battle) between pro-choice and pro-life groups. In addition to abortion, pro-choice has more or less come to include those in favor of the right to die or death with dignity movements, physician-assisted suicide (euthanasia), and, most importantly, scientific defense of rational thought and methodology. I have been fascinated by the efforts of these diametrically opposed groups to obtain advantages for their points of view through the courts and by legislative maneuvers. In general, the pro-choice advocates have been liberal, women, Democrats and more often than not, members of the scientific community; while the pro-lifers are basically socially conservative, Republican, and strong advocates of the Christian Right. (Have I left out anybody?).

Attacks on Scientific Methodology

Critics of scientific methodology have included faith healers, astrologers, paranormalists, and religious fundamentalists. They argue that nothing in science is certain and that the magical and mysterious have an equal right to being believed. Proponents of this group, post-modernists in both the political left and right, have actually gotten into the National Institutes of Health with an official section in Alternative Medicine, including chiropractors, faith healers and bizarre and magical treatment methods. This dissemination of "pseudoscience" tends to break down the standards of reason leading to outlandish doctrines. (Such as the Nazi theories of racial supremacy with it's horrible outcome). Exaggerated media reports of minor fraud in scientific inquiry have led to federal guidelines defining misconduct, causing excessive legal restraints to be placed on scientists, thereby endangering the scientists "right to be wrong," and hindering the scientific process.

Back Door Activism

Defeated in the courts, anti-abortion activists have devised ways to circumvent the Supreme Court decisions and to use state legislatures to obtain bills which will restrict women's access to abortions without proposing an outright ban. These are "protection measures," which, through the use of ambiguous terms, tends to cause de facto dangerous and harmful restriction on access to abortion. Some of the terms used in these laws include "parental consent," "parental notification," informed consent with mandatory waiting periods, spousal consent (even though ruled illegal by the Supreme Court in 1976), and statistical reporting laws which make very private abortion information available to the public. Clinic regulation laws, supposedly designed to protect women, mandate unnecessary and excessive equipment and procedural requirements, are burdensome and redundant. Laws restricting the use of public facilities and which forbid the use of public funds have a devastating effect: they intimidate young and poor women, forcing them to travel to other areas to receive reproductive health care.

Slippery Slope: From Do Not Resuscitate to Euthanasia

Physician-assisted suicide, as espoused by Dr. Jack Kevorkian, has been thrown into public debate by his well-publicized assistance at the deaths of some 26 people in Michigan. Legislation against this form of euthanasia in Michigan has led to murder charges being placed against this arrogant man. His bottom line is "the right not to have to suffer," which again seems to be a "right to choose" for the suffering individual. Since *Roe vs. Wade*, connections have been made between abortion rights and the growing demands for suicide rights, giving the suicide rights movement new energy and legitimacy. Carrying these connections even further, there have been numerous "termination of treatment" cases that have cited *Roe vs. Wade* and it's "right to privacy" as basis for legitimacy. If the analogy between abortion and suicide rights holds true, can we expect to see 1.6 million doctor assisted suicides yearly as we are now experiencing with abortion? This is the moral "slippery slope" and leads one to consider the possible outcome of going from "hard" cases of need for suicide (intractable pain, terminal cancer) to other candidates with less compelling reasons for dying; as in Kevorkian's suggestion to include quadriplegics, and sufferers from multiple sclerosis and severe arthritis.

If assisted suicide is legalized, one can envision "clinics" going up in outlying buildings similar to what is seen with the abortion clinics, maybe even adjacent to abortion clinics. Will there be "suicide on demand," with a white uniformed staff trained to accede to your "right not to suffer"? These clinics just might "network" with nursing homes and organ-donor businesses; indeed Kevorkian favors an auction for the buying and selling of human organs. Again, the analogy to abortion is evident—and there will be "back alley laws" crafted by legislatures to restrict access, again promulgated by the pro-life right. It would seem that morality has been made captive to legality, and legislative acts are taking the place of medical ethics.

*Orange Beach, Alabama.

A recent decision of a Washington state Appeals Court striking down a lower court's creation of a constitutional right to assisted suicide for the "terminally" ill is a model of judicial craftsmanship, and will go far to block indiscriminate use of assisted suicide. The court concluded that the argument for assisted suicide is absurd and has a potential for disaster. It recognized five important social interests that would require a life-protecting law: (1) not placing physicians in the role of killers of their patients, (2) not subjecting the elderly and infirm to pressures to consent to their own deaths, (3) protecting the poor and minorities from exploitation, (4) protecting the handicapped from societal indifference and hatred, (5) and preventing abuse of the system similar to what has occurred in the Netherlands since 1984. (In the Netherlands many patients have been killed who have never indicated they wanted their lives ended).

The Other Side of Euphemism

A glaring example of governmental intrusion is taking place at this time in Congress. The House of Representatives has passed it's version of a bill that will criminalize doing an abortion called "partial childbirth," another euphemism for abortion in the third trimester. This bill will take any medical decision-making out of the hands of physicians and will jeopardize the lives of women and girls who have bona fide need for this procedure. Hopefully, the Senate in it's wisdom, will change the bill enough to take out its' criminal aspects and realize that over reaction to sensationalism of the far right will do more harm than good.

Physicians: Professionals or Technicians:

Moderation is the answer for all of these ethical problems. I've had many patients who have begged to be put out of their misery and I've had many young women who needed to have an abortion, but who couldn't because of it's illegality (at that time). Legislating morals and medical ethics can be a dangerous "slippery slope," both up and down the slope! If physicians are to be professionals, with a moral vision, rather than technicians who have a monopoly on key skills, then they must return to the regrounding of medical values in the original Hippocratic Oath, not some pale, politically correct modern rewrite.

Ensuring moderation in the laws promulgated by Congress and the Legislatures is a task which should be foremost in the agenda of organized medicine. Protection of our patients' medical needs is just as important as ensuring their 14th Amendment rights. The wisdom of Congress and our elected politicians is sometimes clouded by religious or ballot-box zealotry; often forgetting that compassion, as a prerequisite for wisdom of Congress and our elected politicians, is sometimes clouded by religious or ballot-box zealotry; often forgetting that compassion is a prerequisite for wisdom.

The Alabama Eye Bank: 25 Years of Giving Sight

Doyce V. Williams, B.S., M.A., C.E.B.T.

Summary

Modern Eye Banking had its start in the mid-1940's However, it was not until the 1960's that eye banking grew to become a movement or even a necessary part of the health care delivery system in the state of Alabama. The Alabama Eye Bank has grown rapidly to become one of the laregst corneal processing networks in the United States. Corneal transplant surgery remains highly successful in restoring sight.

The contraindications for donor tissue should be clarified to all physicians and other health care professionals. The public should be make aware of the vision care available to them in the state of Alabama. The general public should be aware of how to become a pre-pledged eye donor, of research, teaching and transplantable tissue and also how they can be assured that their wishes are carried out at the time of their demise.

Even with scheduled transplant surgery for all Alabamians, the need for the general public and mideical professionals to be oriented and educated towards multi-organ and tissue donations is important.

History

In the mid 1940's it became apparent that penetrating keratoplasty was no longer an experimental technique, but had become an established part of ophthalmic surgery.[1] Surgeons were trained to perform corneal transplants in the 1940's and 1950's at various locations in the United States. In the early decades of corneal transplant surgery, the lack of suitable donor tissue and microscopic surgical equipment impeded the growth and results of the procedure. At that time sound eye banks that were well organized and provided a quality service to the surgeons and the patients needing the tissue. However, there were others which jeopardized the movement by their disregard for medical ethics and scientific detail.[2]

Due to this disregard, the American Academy of Ophthalmology and Otolaryngology appointed a committee to survey the status of eye banks in the United States. The report of the committee outlined the confusion that existed the eye banking movement at that time, and the lack of medical control which is essential to good eye bank management. Later, in the American Journal of Ophthalmology an editorial that appeared stated, "where there is no control of either policy, funds, or publicity by ophthalmologists, there is a notorious disregard for medical ethics and scientific endeavors.[3]

From this need for medical ethical standards, the Eye Bank Association of America (EBAA), was established. It was chartered in 1961, under the direction of the American Academy of Ophthalmology. Today the EBAA certifies eye banks in North America, Canada, and Latin America. A Code of Ethics has been written since its incorporation.

The Alabama Eye Bank is the only statewide eye banking system in the state of Alabama. It is an accredited and certified Eye Bank under the rules and standards of the American Academy of Ophthalmology, and the Eye Bank Association of America,

The first corneal transplant in the state of Alabama was performed in 1948 by ophthalmologist Alston Callahan, M.D. in Birmingham at the University of Alabama Hospital. The University of Alabama, School of Medicine, Department of Ophthalmology, organized the first eye donor procurement program in 1963. The Alabama Lions Eye Bank was organized in 1969 under the auspices of Alabama Sight Conservation Association. In March of 1984, the Alabama Eye Bank was established as a 501-C3 non-profit organization in the state of Alabama and accepted the task of operating and building the statewide system.

As of 1995 fiscal year, The Alabama Eye Bank is the second largest provider of corneal tissue for transplant in the country. The office and staff in the Birmingham headquarters, along with regional offices in Mobile, Huntsville and Montgomery[5] provide corneal tissue for scheduled transplant surgery for all Alabamians. In addition, the eye bank has provided national programs and materials for various other eye banks in North and South America.

Corneal Storage Notes

By 1960, ophthalmologists began experimenting with freezing corneas in the industrial solvent dimethyl suffoxide at a temperature of -70 C. By this method, corneas were stored for longer than 24 hours.[6]

In 1974, the development of the McCary Kauffman cornea preservation solution allowed for corneas to be used successfully for up to 72 hours post mortem.[7]

In 1986, with the newly announced enhanced MK-199 formula, storage for up to 10 days was possible.[8]

Today, preservation of corneas and sclera by dehydration in glycerine with molecular sieves and storage at room temperature encourages the use of unsuitable tissue for research. This latter preservation method allows tissue to be retained for up to six months. Currently,, the most widely spread cornea storage media is optisol. Optisol-GS is a sterile, buffered tissue culture medium which is enhanced with polypeptides, an

osmotic agent (dextran), chondroitin sulfate, gentamycin sulfate, streptomycin and phenol red indicator. Optisol-GS should be stored between 2 degrees and 8 degrees until ready for use.

The Need

Through the Alabama Eye Bank Network, over 300 eyes were provided for research and corneal transplants in the fiscal year 1995. In Alabama there are approximately 700 corneal tissues used annually for penetrating keratoplasty or refractive surgeries. In fiscal year 1995, the AEB was a supplier of ocular research tissue to over ten major research centers in the United States and was ranked the number one provider of services to South America. There are approximately 6,000 people in the United States on a waiting list for corneal transplant surgery. [10]

Modern Tissue Procurement

There has been a large increase in cornea donations in the state of Alabama since 1980. Aggressive hospital contract agreements, public education, nursing and physicians support, Probate Judges and funeral director participation led to a consistent increase in tissue donations.

Contraindications to Using Corneal Tissue for Transplant and General Donor Information

Table one is a review of the contraindications for use of corneal tissue for keratoplasty.[11] Even though these contraindications prohibit the use of tissue for penetrating keratoplasties, it does not prohibit the tissue for use in vital research or teaching. Donor ocular problems such as cataracts, myopia, hyperopia, and astigmatism can be used for transplant. Eyes that have had corneal infections, glaucoma, intraocular surgery, penetrating trauma, or hereditary diseases of the cornea would not be suitable for transplantation, but could be used for research. It should be noted here that solid neoplasms and even most mestastases are not contraindications to corneal transplants.

Contraindications to Use of Corneas for Transplant

A. Penetrating Keratoplasty
   1. Death of unknown cause
   2. Death with neurologic disease of unestablished diagnosis
   3. Creutzfelt-Jacob disease
   4. Subacute sclerosing panencephalitis
   5. Progressive multifocal leukoencephalopathy
   6. Congenital rubella
   7. Reyes syndrome
   8. Active viral encephalitis or encephalitis of unknown origin or progressive encephalopathy
   9. Active septicemia (bacterlma, fungermia, viremma)
   10. Active bacterial or fungal endocarditis
   11. Active viral hepatitis
   12. Rabies
   13. Intrinsic eye disease a. Retinoblastoma
   b. Malignant tumors of the anterior ocular segment or known adenocarcinoma in the eye of primary or metastatic origin.
   c. Active ocular or intraocular inflammation: conjunctivitis, scleritis, iritis, uveitis, vitreitis, choroiditis, retinitis
   d. Congenital or acquired disorders of the eye that would preclude a successful donor corneal scar for an intended penetrating keratoplasty, keratoconus, and keratoglobus
   e. Ptergia or other superficial disorders of the conjunctiva or corneal surface involving the central optic area of the corneal button.
   14. Prior intraocular or anterior segment surgery
   a. Refractive corneal procedures, e.g., radial keratotomy, lamellar inserts, etc.
   b. Laser photoblation surgery
   c. Corneas from patients with anterior segment (e.g., cataract, intraocular lens, glaucoma filtration surgery) may be used if screened by specular microscopy and meet the Eye Bank's endothelial standards
   d. Laser surgical procedures such as argon trabeculoplasty, retinal and panretinal photocoagulation do not necessarily preclude use for penetrating keratoplasty but should be cleared by the medical director

Retinal Donor Program

In 1995, the Alabama Eye Bank began encouraging Alabama citizens to consider eye donoation for research, particularly eye donors who were identified as having Age Related Macular Degeneration. With resources and the work of University of Alabama-Birmingham researcher, Christine Curcio, Ph.D., the new Alabama Retinal Macular Degeneration Registry has attracted wide acceptance and attention. Those who once thought they would not be an eye donor are now being educated on how their special gift can help so many.

Professional Organ Procurement Cooperation in Alabama

The Alabama Eye Bank has a working relationship with the Alabama Regional Organ Bank (AROB). The AEB's current objectives pertain to the procurement of ocular tissue, while the AROB collects the vital organs. Due to the strict time constraints, the organ bank personnel performs their procedures first when a multi-organ donor is identified.

In Huntsville, Montgomery, Mobile and Birmingham the highly trained professional and full time staff of the Eye Bank perform the majority of enucleations. Throughout rural Alabama, some 75 funeral directors have volunteered their time and services to serve as technicians for the Eye Bank. These funeral directors have completed requirements established by the University of Alabama School of Medicine, the Alabama State Law and the Alabama Eye Bank.

There are literally hundreds of other liaison health care professionals who assist the Eye Bank in giving

sight. These individuals, under state law, cannot remove or perform the sterile enucleation technique. However, they do perform an equally vital role by counseling the next-of-kin at the time of death of a loved one.

There are other groups of people who can have an extremely important role in the journey for sight. Included in these support groups are clergy, nursing and hospital care programs personnel, law enforcement and individuals, and the civic community. It is hoped that each will realize the role that he or she must play for the restoring of sight to the corneal blind of this state.

How Can One Pre-Pledge His Organs or Eyes

According to a National poll, 93% of all Americans have either heard or read about transplantation surgery. One may ask,why then are more people not actually donating their eyes? Perhaps the answer lies in the fact that most Americans and thus Alabamians, are not properly educated and aware of the steps necessary to be a pre-pledged eye donor. In Alabama, one can become a pre-pledged eye donor by signing an eye donor card. These cards can be obtained by various sources such as probate court offices in each county, ophthalmologists, optometrists, funeral establishments and by corresponding with the Alabama Eye Bank.

Still another effective way to become a pre-pledged eye donor is by registering one's wishes on his or her Alabama driver's license or by registering as a Uniform Anatomical gift donor with the University of Alabama at Birmingham or at the University of South Alabama in Mobile.

Due to the cause, time or circumstances of one's death, most pre-pledged eye donations are overlooked. Even with the best of intentions, most pre-pledged eye donors never become actual donors. However, the next-of-kin can make that decision for the deceased. Indeed, the best way for a person to have his or her wishes carried out is by informing their clergy, personal physician, funeral director and immediate family members.

Physicians, nurses and other health care professionals add a new fulfillment to job goals and to another's happiness, by counseling the next-of-kin at the time of death about the importance of an eye donation.

For more information, contact the Alabama Eye Bank at one of the following locations:

Birmingham Headquarters
500 Robert Jemison Road
Birmingham, Alabama 35209
(205) 942-2120 1 -800-423-7811

Southwest Alabama Regional Office
1504 Springhill Avenue, Suite 0844
Mobile, Alabama 36604
(334) 476-3937

North Alabama Regional Office
250 Governors Drive
Medical Hills, Suite I
Huntsville, Alabama 35801
(205) 534-3937

Central Alabama Regional Office
2752 Zelda Road
Montgomery, Alabama 36106
(334) 270-2733

Growth of Eye Banking in Alabama

The Alabama Eye Bank, compared to the national average of procurements among eye banks in North America, has obtained a record growth trend in the area of tissue procurement. To gain a better perspective of this fact, more tissue was donated and thus more Alabamians were given sight in the last 24 months than in the entire decade of the 1970's.

The Mission of the Alabama Eye Bank

Some years ago, the Alabama Eye Bank decided that in order to meet the enormous state and demand for corneas, an eye banking network was established to more efficiently collect and distribute tissue and on a large scale. This required professionalization and accumulation of capital. Today the results of the decision are apparent. In the future, as now, the need for medical orientation in modern eye banking will be imperative. The policy makers and professional staff will need greater training and ability than ever before. With the advent of eye banking becoming an extension to the corneal surgery, health care professionals, lay and support groups will need a clear understanding of their role in GIVING THE GIFT OF SIGHT.

Acknowledgment

Tremendous energy and support has been given by current and charter members and Trustees of the Alabama Eye Bank over the past 25 years. Their vision of giving sight is unmatched in modern eye banking programs. A public salute to these men and women of vision is only proper. The Board of Trustees and Regional Advisory Board who merit such notice are:

William E. Burrus
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E. Ray Smith
John L. Swan, M.D.

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A History of Attitudes Toward Opiate Addiction

William H. Tucker, M.D., FACP

Part I – The Origins of Prohibition 1990-20

Addiction is held by many to be a disorder of the will as tuberculosis had been until Koch's discovery of the tubercle bacillus in 1882. From our ancient origins mankind has inherited an attitude toward anything that is not understood as coming from the lord or the devil. Deviant behavior observed in others or for anything occurring in one's self without explanation is to be feared as being the work of demons. The great impediment to understanding the functions of the brain is the inability of mankind to see it as just another organ of the body. A discussion of the motor functions of the brain does not evoke the concern that is frequently observed in a discussion of the mysteries of the thought processes, the belief systems, and the storage and retrieval of information. Such conversation frequently drifts into the thicket of philosophy and religious explanations without regard to the facts of known metabolic and electrophysiological principles. So it is when narcotic drugs and addiction are discussed. Any main line physician who takes upon himself the responsibility of treating addicts must be prepared for the suspicion of his colleagues that he could be spending his efforts in a more desirable direction. He is seen as interfering with the brain of another; a forbidden activity. Voltaire said that "it is dangerous to be right when conventional wisdom is wrong". It is wrong to treat addiction, this obvious organic disorder of the electro-physiology of the brain as a simple law enforcement problem.

Of the seven psychoactive drugs, three are sold freely with a minimum of legal restraint. These are caffeine, nicotine and alcohol, the last two of these are conservatively estimated to be responsible for five hundred (that is, five hundred !) thousand deaths a year in the U.S. alone. All of the other four combined were reported by the forensic pathologist in 1992 as being responsible for less than fifteen thousand deaths,[1] nevertheless, they are freighted with laws and restralning customs that have evolved in the U.S. during the last one hundred years. These substances are opium,cocaine,the hallucinogens and marijuana. The hallucinogens and marijuana are of only minor importance in the disruption of the fabric of social order. The four hundred pound gorilla of all of these psychoactive substances is purified cocaine[2] (not the crude leaf) for which no creditable or even useful treatment has been developed. The bright spot in the rational treatment of one of these four, opium, is to be found in the advancement in methods of therapy and understanding of the brain's electrophysiology during the last thirty years.

Before getting into this labyrinth of discoveries and revelations demonstrating the organicity of opiate addiction, a history of the origins of the laws and public and professional attitudes should be useful. At the beginning of this century opiate addiction was considered a curious aspect of deviant behavior.[3] No emotional or pejorative judgmental attitudes developed as long it occurred in an individual who was not the object of prejudice for other reasons. Physicians who resisted the requests for more and more opium became aggravated by the inconvenience of these demanding, abrasive and manipulative patients. The aggravation of William Osler is expressed in the 1892 edition of his Principles and Practice of Medicine[4] when he states that "those addicted to morphia are inveterate liars and no trust can be placed in them". This impatience with addicts seen in the main-line practitioner today has ancient roots that extend into the ego structure of the caregiver's reaction to a problem for which he has no answer, or in many cases the conventional answer is wrong and the incorrectness is subliminally perceived thus making the caregiver uncomfortable.

Until the passage of the Pure Food and Drug Act in 1906, labels on medicine bottles did not have to list the contents. Until the passage of the Harrison Anti-Narcotic Act in December 1914 narcotics could be purchased in grocery stores and through mailorder catalogues without any restriction. At that time the incidence of opiate addiction was estimated by Terry[5] as 0.3%, roughly one half the present rate despite all of the laws now in force and billions spent on prohibition of the use of opiates.

Deviant behavior was considered a medical and social problem and of little concern to the government until Theodore Roosevelt and the Progressive Movement started the idea that The Government should be an instrument for social betterment and change. He commissioned a one million dollar study of the make-up and problems of society that needing correcting. The forty volume report used the words moral and morals frequently. These have remained as a significant part of our lexicon. Change in the direction of society championed by one advocacy group or the other spawned many laws designed to correct what they considered deviant behavior. This was the time of the anti-drug, anti-alcohol, anti-certain books and plays (banned in Boston), anti-prostitution, anti-sodomy, antiabortion. anti-white-slave, anti-spitting on the sidewalk, etc, laws were in vogue at all levels of government. H.L. Mencken said that advocates of such laws were puritans who "had a nagging fear that

someone some place was having fun". He said that Woodrow Wilson and William Jennings Bryan[6] were puritans.

At this time, addiction to opium in the Eastern U.S. was mainly seen in upper class white women;[3] not a matter of concern. Smoking and chewing opium was a matter of small concern until the technique of purification became commonly known around the mid part of the 1800's and the hypodermic needle was invented. It was the use of purified morphine hypodermically that led to the development of tolerance and dependence that changed a more or less harmless addiction to painful and prolonged withdrawal reactions that could be treated only with another dose of opiate.

Even this was not enough to arouse the body politic until opium addiction was seen as a Chinese problem. The Chinese had been imported to work the western mines and to build railroads. The failure of the William Jennings Bryan presidential campaign in 1896 that promised to monetize silver at a value of fifteen ounces of silver to one ounce of gold caused the price of silver to drop below the production costs. This closed the silver mines, creating ghost towns that we now visit as tourist attractions and ski resorts. At about this time the western railroads were completed. These two events resulted in widespread unemployment. Large numbers of idle orientals became the objects of intense prejudice. In 1904 Congress forbade the importation of any more Chinese laborers. Passports for Chinese were difficult to obtain.

The Chinese Exclusion Act of 1922 closed down any further Chinese immigration. In the Philippines, the former Spanish Government ran opium stores as a monopoly. The revenue from these stores supported other governmental functions. A survey revealed that there were 12,700 Chinese opiate addicts served by these stores. The strong anti-Chinese sentiment caused Congress in 1907 to order a 15% monthly reduction in the ration of opium sold to the Chinese Philippinos. All opium sales had to cease in six months. Within a few months after this six month period, Congress had reported to it that there was no longer an opiate addiction problem in the Philippines. This was not true then and it is not true now that systematic withdrawal of opium will "cure" addiction. This canard will not die willingly and systematic reduction in the dose of opiates is even now defended by many as if it has been proven to be effective treatment.[7]

The anti Chinese prejudice was taught in grammar and high schools. Children were then and still are told mostly apocryphal stories of "dope fiends" and "opium dens". Chinese travelers were at risk. Deportation back to China was seriously considered. The Chinese life-style differed from the occidentals. Chinese workman preferred stopping by an opium serving establishment after work for a few puffs of opium smoke , relaxing into a drowsy state before going home to supper. These quiet, sleepy, dimly lit opium serving establishments were called by the occidentals opium dens and the user was referred to as a fiend. The fact that the occidental saloons were noisy and dangerous did not seem to have occurred to the whites (with the exception of Carrie Nation 1846-1911 !). A perverted view of the opiate dependent addict probably grew out of the Sherlock Holmes stories by Sir Arthur Conan Doyle (1859-1930) who portrayed the opiate addict as a dangerous criminal in a homicidal rage. The facts are that contrary to cocaine, very little agitation is seen and sedation is the usual reaction. Irrational agitation is the image firmly implanted in the public and in many medical professional minds. Criminal activity is rarely engaged in except to obtain the wherewithal to obtain drugs to prevent the extreme discomfort of opiate withdrawal. There are criminals who happen to be addicts but most opiate addicts engage in criminal activities to support their addiction. Irrational agitation in opiate intoxication is rare whereas dangerous paranoid reactions are seen in the post ecstasy period of cocaine addicts.

This was a time of the ascendancy of the theory of autointoxication .[8,9] Ellie Metchnikoff, the great scientist, partner of Pasteur, discoverer of much of what is known about inflammation and immunity was not then renowned for his seminal work in these fields but for his theories of colonic auto intoxication. Anything relating to the bowels is of particular interest to many bowel conscious older men; the kind that would be on the Nobel Prize Committee. He was awarded this prize in 1908 for his "discovery" of auto-intoxication. The feces in the colon is obviously nasty and harmful and if reabsorbed into the body is toxic causing all sorts of nervous conditions including addiction and insanity. The patient needs to be detoxified by administering enemas and laxatives. Constipation is to be feared. Concern about toilet training of young children is with us now as part of this attitude. If enemas and purgation failed to give relief, surgical removal of part or all of the colon should be considered. It was at this time that the word detoxification came into general use in discussions as to how to give relief from the withdrawal reactions observed in addicts to opium and alcohol. The word is frequently used today by caregivers of addicts with as little reason now as it was then.

From the end of the Spanish American War until the passage of the Harrison Anti-Narcotic Act in 1914 those "authorities" on addiction could be generally divided into those who thought that opiate addiction could be "cured" and those who thought otherwise. On one side was Dr. Alexander Lambert[10] of Cornell University and Bellview Hospital together with Charles B. Towns, possessor of the famous secret "cure" for any addiction, and those who thought addiction to be an organic abnormality of unknown cause, perhaps an antigen-anti-body reaction as stated in a book by George E. Petty.[11]

A recitation of the events leading up to the passage of the Harrison Anti-Narcotic act of 1914 leads to frequent references to the name of Charles B. Towns. He was considered as one of the outstanding "authorities" on any addiction who was reputed to have a secret formula that would cure any addiction. He was a Georgia insurance salesman who came upon someone who

claimed to have discovered a cure for any addiction. After Towns obtained this secret formula he convinced Dr. Alexander Lambert of Cornell University and through him President Theodore Roosevelt that this was the panacea that mankind was seeking. He was sent to China where he claimed to have cured four thousand opiate addicts in short order. He returned to New York to establish the Towns Hospital where the so-called Towns-Lambert treatment was administered with what appeared to be a great success. Mr. Towns recommendations to Congress and state legislatures were considered as authoritative. Since he was convinced that his "detoxification" treatment would cure any addict, why bother with giving an opiate addict a daily dose to prevent the painful withdrawal reaction. Addiction disease was a handy cover for the dope doctors profiting from prescribing opium to addicts. Conceivably this could be the origin of the Treasury Department's prohibition of prescribing maintenance doses of opiates to addicts when it promulgated in March 1915 the rules implementing the Harrison Narcotic Aet passed in December 1914. Freudian psychoanalysis offered support for those who opposed treating with drugs those who were addieted.

The secret formula of the Towns treatment, whose eontents were later revealed, consisted of the following:[11]

Fluid extract of prickly ash bark	1 part
Fluid extract of hyoseyamus	1 part
15% Tincture of belladonna	2 parts

Give a large dose of opium and follow at 15 minute intervals the prescription until a marked atropine effect is noticed. Follow with another dose of opium and give a large dose of a harsh cathartic. In six hours give another cathartic and in six hours give a large dose of castor oil. The patient is then supposed to feel relaxed and comfortable thus bringing the treatment to an end. No follow-up investigations were made since no one returned for a second treatment. This was considered as proof positive that the patient was cured.

After the Spanish American War, our leaders wished to express their new influence by sponsoring international conferences on various subjects. Traditionally we supported the British in maintaining the lucrative opium trade with China against the wishes of the weak Chinese government. The British depended on the profits from the sale of Turkish and Indian opium to support the enormous expense of the Indian Government. An unbalanced Indian Treasury was unthinkable. Much of the diplomatic and military history of the eighteen hundreds down to the outbreak of the first World War is occupied by accounts of the opium wars and a discussion of "Free Trade" with China which was a buzz word for maintaining undisturbed the production and distribution of opium to the Chinese. The part of the U.S. in entering into an alliance with the European powers in maintaining "Free Trade" with China is certainly a part of our history that we should try to forget. The British never developed an attitude toward those who took opium as acting as a criminal and then as now consider it a medical problem. For this reason, perhaps, they have a "drug problem" that differs from ours. English addicts are treated by physicians as patients and only as criminals when they break the law.

With the development of the County Health Officer system around 1910, various health officers became concerned with the treatment of opiate and other addictions. A universal observation was that prescription of narcotics by physicians was the cause of the beginning of addiction of many patients. A call was made for more awareness on the part of physicians as to this hazard. Some effort needed to be made to restrict the use of these drugs by the pharmaceutical companies and the prescribing physicians. Dr. Charles E. Terry of Jacksonville, Fla. reported in 1914[12] that of the 646 addicts studied, 416 were white and 230 were black in a population of 50% white and 50% black. He suspected that whites were more prone to addiction than the blacks; that blacks tended to prefer cocaine to the opiates; females outnumbered males three to two and prefer opiates to cocaine; 55% acquired their addiction from prescribing physicians; 20% from acquaintances; 20% "through dissipation"; only 2% through the treatment of painful diseases. This ratio is not far off from what is observed today. The effect of such reports was an indictment of the prescribing practices of physicians and a call for regulation of this perceived abuse.

The difference between the U.S. Constitution and the civil organization of the Western European powers made it difficult for the U.S. Congress to shape a law restricting the use of opium that would be constitutional. Such regulation was considered the State's responsibility. A constitutional amendment was considered necessary to restrict the use of alcohol. If such were the case, then the same device would be necessary to restrict the use of certain drugs. Another approach was taken by our State Department, who at that time, was urging the Europeans to enact restrictive drug laws that our Congress either would not or could not pass. A series of conferences were held on the subject of the international narcotic trade. Despite the U.S. ambivalence in collaborating with the British in marketing opium in China, Woodrow Wilson's Secretary of State, the teetotaling Christian fundamentalist, William Jennings Bryan, believed in the righteousness of the cause of drug prevention even though we had no laws preventing this trade and some Americans were active in marketing opium to the Chinese. A socially prominent Washington DC physician, Dr. Hamilton Wright, seized on the drug problem to further his ambition and influence. His deliberate exaggerations presented as scientific facts was his vehicle for advancing himself at the State Department. The net effect of his influence was to politicize the drug control law that he was proposing. These are still with us today. He accepted without evidence the Sherlock Holmes image of the opium crazed homicidal criminal. He acquired a reputation as an authority whose reports were considered seriously. In order for the U.S. to present to the international conference on

the drug trade to be held at The Hague, law of the type that it had been urging other nations to adopt was with difficulty passed by Congress in December 1914 to be known as the Harrison Anti Narcotic Act. It had the negative to luke warm support of the pharmaceutical industry and the medical profession who feared if Congress could control the use of one drug it could control the use of all drugs. In order to pass muster constitutionally it was framed as a treaty obligation with foreign governments to be confirmed by the Senate. It emerged from Congress as a revenue measure to be administered by the Treasury Department. Many thought it to be an unconstitutional regulation of the practice of medicine which was considered the state's responsibility and not a federal matter. It was defended with difficulty during the next five years. Once in 1916 the Jin Fuey was ruled unconstitutional but the Supreme Court reconsidered and passed it as constitutional by a narrow 5 to 4 declsion in 1919[13] the year that the Eighteenth Amendment to the Constitution was ratified by all but two states, Connecticut and Rhode Island. Not all of the Supreme court Justices were carried along with the popular anti-Chinese prejudice toward opium. Justice McReynolds wrote the dissenting opinion. It stated his "conviction that limitations must be placed on the power of the federal government to regulate the medical profession by means of a revenue measure." During the arguments before the court it was stated that Dr. Moy, a Pittsburgh physician, could not prescribe opium to an addict to "keep him comfortable by maintaining his customary use". The prosecution maintained that "the poor victim in the fatal clutches of the drug habit — where the narcotic — dispensed to him — every grain of which brought him nearer to the grave". This type of misinformed hyperbole shapes our present laws relating to narcotics. While it is true that the addict who obtains his supplies from the street has 63 times the mortality of a normal person of the same age, the regularly maintained opiate addict on methadone maintenance has a mortality rate approaching normal for the social and employment environment in which he lives.[14, 15]

These companion prohibitions against alcohol and drugs became the law of the land in the same year of 1919. As to Dr. Hamilton Weight, his image became tarnished when the teetotaling Secretary of State Bryan smelled what he thought to be alcohol on Dr. Wright's breath but by then his "surveys" had served their purpose and could not be undone.

In keeping with the Progressive Commission theme, the Treasury Department took the position after the passage of the Harrison Act that to take an addicting drug was a criminal act by an immoral person and for a physician to prescribe a narcotic to maintain an addict was a criminal immoral act. The anti-Chinese bias made Opium the drug under consideration during these times. Other psychoactive substances were not prominently mentioned until the anti-Negro sentiment in the South, especially around Atlanta called attention to the use of cocaine after the first World War since it was preferred by the blacks.

With the physicians prevented from treating addicts, after the Supreme Court's decision declaring the constitutionality of the Harrison Act the stage was set for a huge law enforcement effort to control deviant behavior relating to the use of psychoactive drugs. Massive disruption of the social order was the result.

Opiate Addiction 1920-1962 Part 2 – The Period Of Intolerance

In 1919 both prohibitions of drugs and alcohol became the uncontested law of the land in the opinion of the Federal Bureaucracy. The misunderstanding came when the words "without cause" was interpreted by many doctors to mean the relief of the misery of the opiate withdrawal reaction as a "cause". The Treasury agents started indictments of some prescribing physicians subjecting them to heavy expenses necessary for their defense. These numerous cases became known as "The Doctor Cases". Some were won by the Treasury as in the case of the Jin Fuey Moy case in 1919 and some were lost as in the Linder case in 1924. When a case was lost it was never appealed for fear of establishing a precedent in law.[13] Precedents for the prosecution and for the defence are still cited in cases of indictments of a prescribing physician. Even now, it is not settled law but the effect is the same because the expense of the defence prevents the individual physician from prescribing for the relief of an addict to an opiate in the withdrawal. After 1920 almost all opiate prescribing ceased except for a few hold outs such as Dr. Willis P. Butler of Shreveport, La. who operated an out-patient opiate dispensing clinic with the support and encouragement of the local politicians including a Federal Judge until 1923. The Washington establishment knew that they had a weak case in attempting to enforce the Harrison Act. Dr. Charles E. Terry who had spent seven years as the Executive of the Committee on Drug Addiction of the Bureau of Hygiene wrote Dr. Butler in 1928: — "I know of no single piece that can compare with yours in constructive experiment in the practical handling of cases — you did this work probably twenty years ahead of its time — in ten or fifteen years your plan will be in wide spread operation in this country —if it is not, it will simply mean that national education of both official and lay groups has been slower that I hope it will be".[16] Terry's prediction was many years in error. It was not untll 1972 that methadone maintenance was allowed.

Ernest S. Bishop[17] who trained at Bellview wrote and lectured in the 1920's of his belief that opiate addiction was an organic disorder and deserved to be treated as such since the dose of opium needed to keep an addict comfortable could be determined with exactness. He hypothesized that George E. Petty[11] was more nearly correct in his idea that addiction to opium was in some way related to an antigen-antibody reaction. The AMA Committee on drugs vehemently opposed this view since no antibodies could be found in the blood of an addict. Dr. Bishop advocated maintenance clinics to dispense inexpensive drugs until a cure became available. His advocacy received the censure of

the Treasury Department, the American Medical Association and the American Bar Association. He was indicted but never brought to trial for fear that he would be vindicated and the entire drug enforcement policy would be in jeopardy. He was an opponent of specific cures such as the Towns-Lambert treatment which he believed to be of no value. The American Medical Association took the position that withdrawal reactions of the opium dependent addict was a disorder of the "will" similar to hysteria. Dr. A. G. DuMez, member of the Treasury Department Special Committee wrote a review for the Surgeon General[18] that there was a lack of a clear-cut treatment and it is "only since the Harrison Act that the medical profession has awakened to the fact that addiction to the use of narcotics produces changes in the organism which cannot be controlled by will power of the individual". — "Our present methods of treatment of addiction must be considered failures". The American Medical Association Narcotic Committee, one of whose members was Alexander Lambert (of the Towns-Lambert secret formula fame) rejected the antibody hypothesis and at the same time called for the censure of Dr. DuMez's pessimism. Dr DuMez, a federal employee, considered himself threatened. He reluctantly recanted a part of his statements. There was a serious "red scare" in the early 1920's and opium addiction became associated with the IWW and communism.

All during the first thirty seven years of this century was heard the strident voice and effective publicity of Capt. Richmond Pearson Hobson against the use of alcohol and narcotic drugs.[19] He was a child prodigy from Greensboro Alabama, youngest and first ranking scholar in his class at Annapolis, Spanish American War Congressional Medal of Honor hero, Congressman from Alabama, introduced the anti-alcohol Eighteenth Amendment to the Constitution, defeated for the Senate by Oscar W. Underwood in 1914, became the highest paid lobbyist for the ratification of the Eighteenth Amendment, obtained ratification of all states except Rhode Island and Connecticut in 1919. For the remainder of his life he devoted his enormous energy to anti-drug crusades. He died in 1937. He called heroin (the Bayer trade name for acetelated morphine) addicts "the living dead". He proposed to raise ten million dollars to combat the drug menace. He organized the International Narcotic Education Association in 1923; the World Conference on Narcotic Education in 1926 and the World Narcotic Defence Association in 1927. He proclaimed National Narcotic Week by radio, in the press and by distributing millions of pamphlets that "the drug menace is more communicable than leprosy". "Drug addicts are the principal carriers of the vice diseases; with their lowered resistance, are incubators and carriers of streptococcus, pneumococcus, the germ of flu, of tuberculosis and other diseases". He was against maintenance clinics in any form and succeeded in convincing Congress that punishment was the proper way to deal with this threat to good social order.He was a superior fund raiser, speaker and author of millions of pamphlets, booklets, and books. He claimed that heroin was so addictive that one ounce was enough to addict one thousand people. His statements concerning "the drug menace" are still used as examples of the use of the overblown hyperbole to influence legislation.Two examples of his statements will illustrate his intensity. "Upon the issue hangs the perpetuation of civilization, the destiny of the world and the future of the human race". "The whole world is menaced by this appalling foe — marching — to the capture and destruction of the whole world".

An editorial in the *JAMA* in 1925 stated that the Harrison Act of 1914 had not reduced the number of addicts and may have made the problem worse.[20] By 1929 the three federal prisons in Atlanta, Fort Leavenworth and MeNeil Island, Washington, were overcrowded with violators of the Harrison Act. McNeil Island, with a capacity of 3738, had 7589 prisoners of which more than 2300 were incarcerated for drug crimes.[21] The wardens were protesting that prison was not the proper place to treat addicts. Congress was feeling the pressure to do something about alcohol and drug prohibition. There was greater support to repeal the Eighteenth Amendment on alcohol prohibition. A new and numerous set of criminal millionaires had been created.

Congress wrestling with the disaster of the Eighteenth Amendment prohibiting the manufacture and sale of alcohol decided to straddle the issue of widespread violations of the law and in its wisdom repealed the Eighteenth Amendment and retained drug prohibition. The Treasury Department up until this time operated two prohibition agencies, one for alcohol and one for prohibited drugs. In order to get the necessary support for repeal of the alcohol laws the large number of employees that would loose their jobs at the beginning of the Great Depression in case of repeal were promised a transfer into anti-drug activities. The difficulty in this plan was that the anti-drug employees were under civil service. Many had great difficulty in passing this simple test. Congress, still operating under the misinformation that slow reduction in the dose of opiate would lead to a cure as in the Philippine experience, passed the Porter Narcotic Farm Act establishing two prison-like hospitals at Fort Worth, Texas, and Lexington, Kentucky. This time Congress established the Federal Bureau of Narcotics to be headed by a Commissioner. Levi G. Nutt of the anti-alcohol unit was scheduled for this job until it was revealed as a result of the assassination of the mafia figure, Arnold Rothstein, that his son and son-in-law and possibly Mr. Nutt had been in some way "indiscrete".[22] When the effects of Rothstein were examined it was revealed that he had five million dollars worth of cocaine in his possession. This scandal resulted in the appointment of another alcohol prohibition agent, Harry G. Anslinger, as Commissioner. His duties had been to deal with foreign governments in an attempt to persuade them not to import alcohol into the U.S. He was against any narcotic maintenance of addicts as out-patients and no dispensing was allowed during his administration which extended until 1962. Hashish got his attention when friction arose between the

white Americans in the Southwest and the Mexican-Indians. The Great Depression and widespread unemployment created prejudices similar to what had been experienced with the Chinese and opium and cocaine use by the blacks. Congress was urged to pass legislation restricting the use of marijuana which was being blamed for many of the ills of that region. This seems to confirm the idea that for a drug to be prohibited, it must be identified with a particular group is the object of prejudice for other reasons. Drug use alone is not sufficient to get enough legislative support to get a drug on the forbidden list. Legislation to ban the use of marijuana evoked the same legislative restraints as had opium and alcohol. During Congressional hearings on the prohibition of marijuana Commissioner Anslinger testified: "If the monster marijuana ever met the monster Frankenstein, it would scare Frankenstein to death". The constitutional device that was used in the case of opium was repeated in passing marijuana prohibition. A treaty with Canada and Mexico was made concerning migratory birds. The Marijuana Prohibition Act was passed as a treaty obligation with Canada and Mexico. No or very few scientific studies on the physiology and pharmacology of cannabis has been allowed. Only last year the University of California was denied permission to study the effect of cannabis on glaucoma.

Anslinger imparted an attitude to a significant and-influential number of medical professionals that the addict is a criminal and the treatment of necessity should be punitive rather than therapeutic. He advocated maximum legal sanctions which reached its apogee in 1956 when the death penalty was decreed for anyone over the age of eighteen who sold heroin to anyone under the age of eighteen. No one was ever executed and the street price remained stable and in plentiful supply.

The motion picture industry was restrained from using the subject of addiction under the 1934 Production Code of the Motion Picture Association. No film on the subject of narcotics appeared until the 1948 film "To the Ends of the Earth" which lauded the Federal Bureau of Narcotics in its international activities to stop smuggling. In 1955 "The Man with the Golden Arm" broke with the 1934 ban on the subject of addiction.

The operation of the two "narcotic farms" at Lexington, Kentucky and Fort Worth, Texas, by the U.S. Public Health Service. It became obvious that the withdrawal reactions of opium was a phenomena that could not be due to hysteria alone. Marie Nyswander, a psychiatrist at the Lexington hospital, wrote in a book in 1956 stating that she could not find a single creditable study that showed that psychotherapy alone had lead to a cure of any significant numbers of addicts.[23] From this organization grew the giant Mental Health Department with a large budget of hundreds of millions of dollars while the Drug Enforcement Agency under Anslinger remained a relatively small bureau with a modest appropriation. Probably this was the reason for his, not exactly, voluntary retirement in 1962. The major thrust of his tenure as Commissioner was attempted interdiction at the borders and a zero tolerance of addicts and prescribing physicians. A minimal effort was expended on education and prevention. Little or no research concerning addiction was tolerated. The only permissible treatment was to be found as in-patient hospitalization at the Lexington and Fort Worth hospitals which were opened in 1935 and 1936. The expectations were that enforeed abstinence would lead to a cure as had been reported in the Philippine experienee which those knowledgeable of addiction knew not to be true. Some ideas die hard! Thousands of addicts were sent to these prison-like hospitals by the eourts or by voluntary admission. After the retirement of Commissioner Anslinger in 1962 the bars were removed and conventional hospital aetivities replaced the prison-like atmosphere.

Part 3 – 1962 To THe Present From Biology To Drug Policy

After the retirement of Commissioner Anslinger, some relaxation on the restrictions on the study of narcotics was permitted. Marie Nyswander came to Rockefeller University and joined with Drs. V. P. Dole and Mary Jeanne Kreek to study methadone, a synthetie narcotic developed by the Germans in World War II.[24] After extensive clinical studies they found that: the half life was approximately twenty four hours; that when taken by mouth tachyphylaxis did not develop; that the same daily dose would evoke the same response year after year; that it did not abnormally stimulate the emotions, that it did not interfere with the operation of complex machinery; that the range between the therapeutie and toxie dose was wide; that it effectively blocks the withdrawal reaction of heroin of any of the opiates as long as the twenty four hour blood level is in excess of 70 ng/dl and that serious side effects are rare. After exhaustive studies eonfirming their findings by hundreds of investigators, dispensing clinics were permitted in 1972. There are now 659 clinics in all states except Montana, South Dakota and Mississippi serving doses of methadone to approximately 200,000 daily. Although methadone is probably the most extensively studied drug in the Physicians Desk Reference, it is still listed as an experimental drug. Its supporters are few and its detractors are powerful and numerous. A study of all methadone clinics in the U.S.[25] revealed that fully one half purposely give less than an optimum dose to produce comfort from unpleasant withdrawal symptoms. Those clinics that give a large enough dose to produce a blood level of 70 ng/dl 24 hours after the last dose, have a higher rate of retention in treatment, a lower rate of criminal activities and a higher rate of regular employment. It is now known that fully one fourth of the present opiate addicts under treatment will remain addicts indefinitely. Twelve and twenty year follow up studies confirm this observation.[26,27,28]

Paul Ehrlich postulated in 1913 that perhaps a

drug's action in the brain might be due to special "receptors".[29] This speculation proved true by the studies of C.B. Pert and S.H. Snider in 1973.[30] This finding lead to other studies by other investigators that demonstrated that certain portions of the brain make short chains of aminoacids arranged in a specific sequence in twenty four molecules or less that have a morphine-like quality. These short chain aminoacids made by the brain to protect the individual from pain and discomfort fluid. Those with an abundant supply are resistant to postoperative surgical pain and those with less suffer from pain and require more anesthetics. These endogenous morphine-like substances have been given the names endorphins, enkinens, dynomorphins, etc. Other combinations of short chain aminoacids are being identified. When an opiate finds its way to the thalamus and other areas of the brain, the endogenous production of these short chain aminoacids is depressed. In the event the individual suppresses the endogenous brain's production over a considerable time, approximately twenty five percent will remain uncomfortable permanently for lack of the endogenous production. This would seem to be the case since at least twenty five percent of opiate addicts are still requiring an exogenous source administered regularly in twelve and twenty year follow up studies.

The great difficulty in understanding and treating addiction is the inability to think of the brain as just another body organ with similar metabolic mechanisms as the other body organs. Understanding has been prevented until the last few years by the inability to study the exact location of action of a psychoactive drug in the brain of a living patient. The crude methods of conventional x-ray of the contents of the cranium and the electroencephalograph did not lead to any significant understanding and localization of the thought processes and behavior. The discovery of Yellow and Berson in 1958 permitting the attachment of a radioactive particle to a molecule and following that molecule to its eventual location in the brain. The emission of the radiation from the particle and the refinements of the sensing devices has lead to the development of the tomograph, the computerized tomograph, (CT Scan); the positively charged particle that emits at right angle to the center of the charged particle (PET Scan) and the single photon emission at 90 degrees only (SPECT Scan) and Magnetoencephalography (MEG Scan). The latter applies the principle of tomography to magnetic field measurements that more nearly allows the creation of three dimensional views of the various parts of the brain in vivo. One of the advantages of the PET scan is that it permits the subdivision of opiate receptor sites using different tracers.[31,32]

SUMMARY AND COMMENTS

After the identification of endorphins and their kindred endogenous short chain aminoacids in the early 1970's the disease concept begin to be used to explain maladaptive behavior as it had been used to explain physical disorders. The lack of success of this general approach has been impeded by the inability to study the brain's functions in the living patient. After the discovery of the technique of radioimmunoassay and refinements in x-ray sensing devices, the mysteries of those parts of the brain involved in drugs, behavior and brain chemistry are being slowly explained. Refinements of this method lead to variations in the way the particle is charged and perfection of sensing devices to quantitate the number of charged particles emitted and the size and location of the emitting source. Within the last ten years a three dimensional view of the brain has been developed and the functional alterations that occur form the effects of the seven groups of psychoactive drugs are being explained. The meaning of all of this is that the puzzle of opiates' action in the brain is being unraveled. The action in depressing the formation of endorphins and similar short chain aminoacids by externally administered opiates creates in approximately one fourth of all who receive a regular dose of opiates over time a permanent irreversible change in the brain's capacity to make the necessary short chain amino acid groups for the patient to stay comfortable without an exogenous source of these substances. This now demonstrates that no amount of psychotherapy and/or incarceration will restore the brain's capability to make its own short chain aminoacids. The excessive expense incurred in in-patient treatment of addicts and the burdensome complicated restrictions to the administering treatment to out-patient addicts is not cost effective in most cases. The civil authorities must come to the realization that opiate dependence is a deficiency state like diabetes, hypothyroidism, myasthenia gravis, parkinsonism, pernicious anemia and a host of other deficiency syndromes. The opiate dependent patient has through a lack of understanding brought upon himself this deficiency state from which he is now unable to correct. With the advances in knowledge of the brain's electrophysiology, medical management of addiction and not punitive measures should be in society's best interest.

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An Unusual Presentation Of Post-Traumatic Pseudocyst Of The Spleen: Case Report

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ABSTRACT:

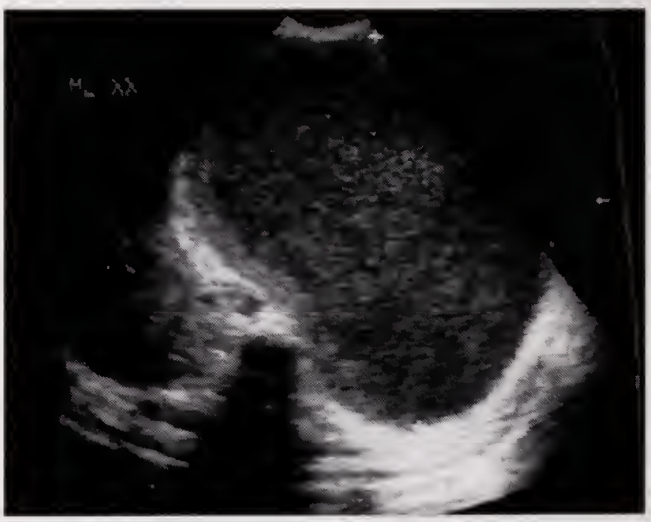
Splenic pseudocysts are rare complications of abdominal trauma. Though rare, these lesions have been well-documented in the literature. According to current classification schemes, approximately 30% of all splenic cysts or pseudocysts result from direct abdominal trauma. The case report herein is an example of a splenic pseudocyst with an atypical presentation. The patient was evaluated and treated for progressive hypertension initially. Inability to control hypertension, and the appearance of symptoms suggesting intra-abdominal pathology prompted radiographic evaluation and surgical consultation. Prompt resolution of the hypertension followed operative resection of the splenic pseudocyst.

INTRODUCTION:

Splenic pseudocysts, though rare, have been reported in the literature since the first description by Andral in 1829[1]. Pean is considered to be the first to form a splenectomy for a single splenic cyst[2]. The original classification of cysts of the spleen was proposed by Fowler in 1953[4]. This scheme has since been expanded and approved by Martin[5]. According to this classification, pseudocysts comprise approximately 30% of all splenic cysts and are thought to arise secondary to abdominal trauma. Interestingly, the majority of these patients are unable to recall significant abdominal trauma either remote or recent. The presentation of these patients will vary from vague abdominal pain to symptoms related to asymptomatic abdominal mass. The following is a case report of post-traumatic pseudocyst detected in a pediatric patient with unexplained hypertension which promptly resolved following cystic ablation.

CASE REPORT:

A ten year-old white female was referred to her local pediatrician for evaluation and treatment of unexplained hypertension detected on routine blood pressure screening at her elementary school. She was found to have a blood pressure of 130/80 mmHg on the initial evaluation. Subsequent evaluations revealed blood pressures which varied from 120/70 mmHg to 140/85 mmHg. All of these pressures were considered hypertensive for her age of ten years. Laboratory studies and past medical history were not helpful in determining the source of hypertension. A Pediatric Cardiology referral was obtained. Physical examination during the previous six months had been unremarkable with no documented abdominal mass. The work-up included electrocardiographic and echocardiographic examinations both showing no abnormalities or possible etiologies for the increase in blood pressure. There was no evidence of coarctation of the aorta or cardiac structural defect. Pediatric Oncology was consulted. This work-up was negative for a source of the hypertension as well. Physical examination during this initial work-up did not reveal any abdominal pathology nor significant findings on examination. Approximately three months after the pediatric oncology consultation, the patient experienced an increase in her blood pressure to levels of 150/70 mmHg on average. In addition, the patient complained of mild left upper quadrant abdominal fullness which was not associated with mass on physical examination by her primary doctor. Additional symptoms of early satiety prompted further radiographic examination of the abdomen. An abdominal ultrasound was obtained and demonstrated a large homogeneous mass in the left upper quadrant of the abdomen (Figure 1). The mass appeared to be in continuity with the lower pole of the spleen. There was suggested communication of the mass with the upper



(Figure 1) *Abdominal ultrasound showing homogeneous mass in the left upper abdominal quadrant. Mass is in continuity with normal splenic parenchyma laterally.*

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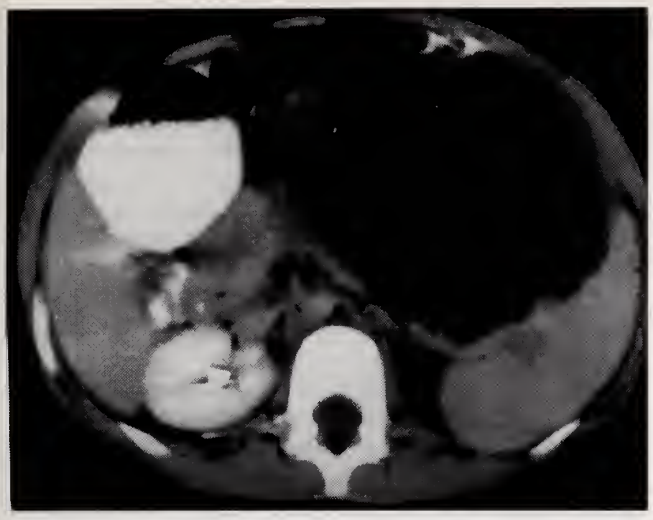
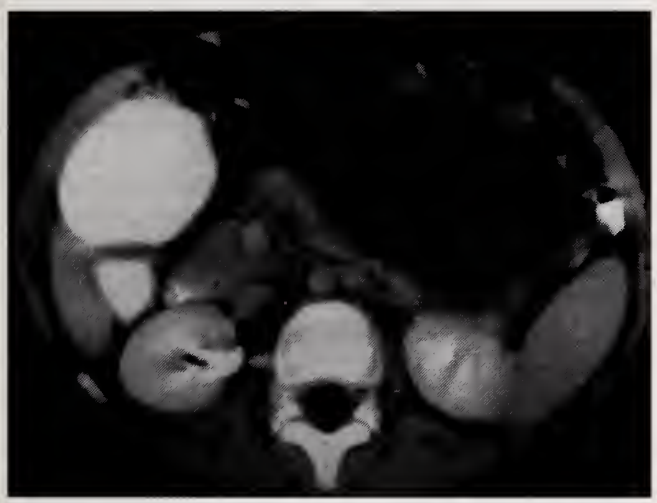


(Figure 2) *Computerized tomograph of the abdomen. Note the large cystic mass in the left upper quadrant with normal spleen laterally.*

pole of the kidney. Abdominal computed tomography confirmed the origin of the mass as being from the lower and lateral portion of the spleen (Figure 2). The left kidney was displaced inferiorly and left adrenal gland could not be visualized (Figure 3). No other abnormalities were noted. Laboratory studies, including complete blood count with differential, SMA-7, SMA-12, urinalysis, serum catecholamines, serum cortisol, and urinary catecholamines, were all normal. A Pediatric Surgery consultation was obtained. Past medical history revealed a history of trauma in the remote past. Eight months prior to the initial evaluation, the patient had fallen approximately eight feet during gym class. Pre-operative diagnosis of post-traumatic pseudocyst of the spleen was verified. The patient was admitted for exploratory celiotomy and splenectomy. The patient was prepared with peri-operative antibiotics, pneumococcal vaccine, meningococcal vaccine, and haemophilus influenzae vaccine.



(Figure 3) *Computerized tomograph of the abdomen showing displacement of surrounding structures. Left adrenal gland not visualized.*

The operation was performed through a left subcostal incision. The cyst was incised and drained of approximately 1800 cc of dark brown fluid. The collapsed cyst was then raised further above the level of the incision and revealed numerous trabeculations of underlying normal splenic tissue. A partial decapsulation of the pseudocyst was performed and the edge was over-sewn with 3-0 vicryl suture to assure hemostasis. The omentum was placed in the cavity of the splenic remnant for hemostasis and a means of drainage for the residual cavity. Post-operatively, the patient remained hemodynamically intact without signs of infection. Serial blood pressure monitoring post-operatively showed a slow normalization to normotensive levels for age. Follow-up evaluation demonstrated maintenance of normotension for age.

DISCUSSION:

The etiology of splenic pseudocysts is thought to be related to remote or recent abdominal trauma. Garvey and Fowler reported a variable interval between inciting trauma and the detection of the pseudocyst between 11 months and 40 months respectively[3,4]. Since cysts of the spleen are associated with neoplasia, it is vital to accurately characterize and classify each cyst in order to optimize treatment. The current method of classification of splenic cysts was proposed by Martin in 1958[5]. This scheme divides all splenic cysts into two categories. Type I or true cysts have a proper epithelialized membranous lining. This category can be further subdivided into parasitic and non-parasitic cysts. Parasitic cysts are most commonly ecchinococcal, whereas non-parasitic cysts are related to congenital or neoplastic conditions[6]. It is thought that the congenital cysts arise from an abnormal infolding of peritoneal cells which become entrapped in the substance of the developing spleen during embryologic life[7]. Type II or false cysts do not have a well-defined epithelialized membranous lining. These are considered pseudocysts and usually result following trauma.

Traumatic pseudocysts result from a subcapsular parenchymal disruption without perforation of the capsule. The hematoma continues to enlarge and eventually liquifies. This provides an excellent environment for formation of an inflammatory response with eventual fibrosis and capsule formation. Fluid in the cyst has a higher osmolality than does the surrounding tissues, therefore, a constant flux of fluid into the cyst is observed[8]. By this mechanism, further enlargement occurs and in 25% of all cases will lead to spontaneous rupture and hemorrhage of the cyst[9]. It is for this reason operative management of these cysts is advocated by most authors. Signs and symptoms related to the evolution of splenic pseudocysts are quite variable. The symptoms vary from vague abdominal pain to asymptomatic abdominal masses. Other presenting complaints include flatulence, early satiety, nausea, vomiting, exertional dyspnea, anorexia, fullness in the abdomen, diarrhea, and dysphagia[10,11,12,13]. The patient presented in this case did not have any of the common complaints. The patient presented with

unexplained hypertension which subsequently led to the finding of an enlarging abdominal mass. Physical examination for several months prior to the operation did not demonstrate a palpable mass despite a gradually worsening hypertension. This phenomenon has not been previously described in the literature. Qureshi, in a large series, described a number of patients presenting with left renal colic due to compression of the left kidney[14]. It would seem feasible the hypertension in the patient presented may have resulted from extrinsic compression of the kidney which by reflex stimulated an exaggerated neurohormonal response. If the kidney perceived hypoperfusion, for whatever reason, the renin-angiotensin mechanism would be activated, resulting in hypertension in a normovolemic patient. The role of adrenal compression in the onset of hypertension, if any, remains to be elucidated.

The diagnostic work-up for a patient with a suspected splenic pseudocyst should include an array of investigations. Plain films of the abdomen will reveal a discernable mass in approximately 50% of cases. Calcifications are seen in 10-25% of abdominal films[15]. In order to discern between solid and cystic masses, an ultrasound should be obtained. Controversy exists as to whether liver-spleen scans should be obtained to assess the amount of functional splenic tissue. A computed tomograph of the abdomen is the most accurate means of determining the character, origin, and extent of perisplenic involvement. This mode of evaluation was first shown by Economides, et al in 1980 to be effective and accurate in the pre-operative evaluation of patients with splenic cysts[16].

Traditionally, the treatment of choice for splenic pseudocysts has been cystosplenectomy. Splenic preservation has become the preferred practice, particularly in children. This is partly due to the relative increased incidence of overwhelming post-splenectomy sepsis. The procedure of partial splenic decapsulation as popularized by Toloukian and Seashore has grown in acceptance[17]. This procedure combines an unroofing partial decapsulation of the cyst, sparing of the splenic remnant, and external drainage. There is a higher incidence of subphrenic abscess with external drainage procedures. Camazine et al, in a recent review, reported decreased infection rates using the omentum to fill the splenic cavity while providing a means for resorption of the residual inflammatory exudate[18]. In our experience, this was an excellent alternative to external drainage of the cyst encountered in the patient presented.

CONCLUSION

The diagnosis of splenic pseudocyst should be considered in any patient who presents with an abdominal mass and a history of abdominal trauma. Diagnostic studies should include plain films, ultrasound, CT scan, and localizing studies if needed to elucidate the extent, origin, and character of the lesion. Once diagnosed, the lesion should be excised as there is a significant risk of spontaneous rupture and hemorrhage. The degree of resection should be directed toward splenic preservation to maintain immunological function of the spleen.

The patient discussed in this article presented with signs and symptoms not previously reported in the literature. The majority of patients present due to the intrusion of the pseudocyst on the surrounding structures. This fact supports the theory that renal and/or adrenal compression may have incited the hypertension in this patient. This phenomenon should be considered as a possible source of seemingly unrelated medical problems which result from the compressive effects of large pseudocysts of the spleen.

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Privacy And Computerized Medical Records

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Part I. Literature Review

Patient Confidentiality and Right to Privacy

"**Privacy**, although a highly complex concept, is defined as the right of a person to limit access by others to some aspect of the person.....**Informational privacy** [means] ...that information about a person is beyond the range of others without specific authorization.... **Confidentiality** is a form of informational privacy characterized by a special relationship, such as the physician-patient relationship. Personal information obtained in the course of that relationship should not be revealed to others unless the patient is first made aware and consents to its disclosure. **Security** encompasses a set of technical and administrative procedures designed to protect data systems against unwarranted disclosure, modification, or destruction and to safeguard the system itself" (Gostin et al., 1993, p. 2487).

The issue of privacy and confidentiality of patient care records transcends the setting of our technological age with its electronic information systems, and indeed the value of confidentiality was already recognized in antiquity. By 400 BC the Oath of Hippocrates asserted the confidential nature of medical communication and made it an obligation of the physician:

> Whatever, in connection with my professional practice, or not in connection with it, I may see or hear in the lives of men which ought not to be spoken abroad I will not divulge, as reckoning that all such should be kept secret (Chandler, 1988).

Some codes of medical ethics make secrecy absolute, without exceptions of any kind. For example, "the World Medical Association's 1949 International Code of Medical Ethics provides: 'A doctor shall preserve absolute secrecy on all he knows about his patient because of the confidence entrusted in him'" (Falk, 1987, p. 1). The first Code of Ethics of the American Medical Association (AMA) in 1847 was less absolute, holding that "none of the privacies of personal and domestic life, no infirmity of disposition or flaw of character observed during professional attendance, should ever be divulged by him [the physician] except when he is imperatively required to do so" (Falk, 1987, p. 2). The AMA continues to maintain this tradition in its 1995 Principles of Medical Ethics: "A physician shall respect the rights of patients...and shall guard patient confidences within the constraints of the law" (AMA, *Principles*, 1995).

In 1881 a Michigan physician was sued for invasion of privacy when he breached physician-patient confidentiality by allowing a lay person into a room where a woman was in labor. The patient won the suit and collected damages despite severely mitigating circumstances: The doctor had enlisted the help of a friend to carry some of his supplies on a dark and stormy night, over roads so bad that a horse could not pass. The layman entered the immediate delivery area only briefly, to restrain the patient's hands when she became violent and kicked the midwife in the stomach, so that she had to leave the room. In deciding against the physician, the justices concluded that the plaintiff was not fully informed of the layman's nonmedical status (*De May v. Roberts*, 9 N.W. 146). The Alabama Supreme Court in *Horne v. Patton* (1973) quoted as persuasive the Supreme Court of New Jersey (*Hague v. Williams*, 1962) which found that "the benefits which inure to the relationship of physician-patient from the denial to a physician of any right to promiscuously disclose such information are self-evident. On the other hand, it is impossible to conceive of any countervailing benefits which would arise by according a physician the right to gossip about a patient's health" (*Horne v. Patton*, 287 So.2d at 827). Surely the damage to the patient is as great if the gossiper is a non-physician who has legitimate or illegitimate access to medical records.

The philosophical and ethical basis of privacy rights rests on "the principle of autonomy and respect for persons," which "entails...the right of privacy and inviolability of the person" (Kluge, 1994, p.24). Kluge asserts that current legal and ethical standards for protection of medical record privacy are inadequate, because they were developed on the basis of property rights over material, tangible (paper) records. Since medical records may contain a rather complete representation of an individual, and since computerized records cannot be localized and physically protected (locked up) as can paper records, Kluge feels that under this new paradigm, electronic medical records should be ethically treated as "patient-analogues in information-space" (p. 24). Whatever respect is due the patient is also due the patient's analog, the electronic record, which is ethically treated as an alter-being. Lincoln and Essin (1994) challenge Kluge's philosophical conception of the record as a separate, freestanding entity, preferring to consider "that all identifiable medical data are extensions of the individual and should be accorded the same respect for privacy and confidentiality as...other data generated by the individual's behavior that can be adversely interpreted" (p. 349). Despite the philosophical disagreements, Lincoln and Essin restate, clarify, and fully support Kluge's six

guidelines for the use of personal data:

1. Any use should be a matter of public record; [i.e., no secret data banks]
2. The use should be procedurally defensible (not voyeurism);
3. If a linkage is maintained, the subject of the data should be informed;
4. In this case, the subject should have control over any use;
5. There should be protection from unauthorized access; and
6. The subject (or a designated representative) should be able to review any record for accuracy, completeness, and relevance (p. 349).

Lawrence (1994) notes that in the course of providing health care, "each patient encounter takes place against a backdrop of trust....If there was a perceived danger of harm from the disclosure of information, the patient might refuse to continue the regimen of care or falsify information" (p. 639). Agich (1994) discusses the threat to privacy involved in "the blanket consents that patients give [insurers] under the guise of releasing information for the purposes of reimbursement. Quality assurance similarly creates problems." The concern, of course, is that "not only health care professionals but also insurers, employers, and others might peruse medical records without consent" (p. 324).

Moehr (1994) comments on the "basic polyvalency of data," such that "data acquired in an encounter between a patient and a care provider describes not only the patient, but also the provider....The data is...not only a model of the patient, but also and simultaneously a model of the provider. Patient data thus become provider data....used for purposes of peer review, quality control and quality assurance" (p. 59-60). Moehr's strong bias toward access as opposed to confidentiality is betrayed when he states that "it has also been suggested to log all accesses by users to the patient data base. The consequence of this would be the establishment of a data base on every users' [sic] utilization of the patient information system with the definite possibility of infringements on the privacy of these users" (p .60). This almost unbelievable twisting of the meaning of informational privacy clearly demonstrates the need for continued vigilance by all who value individual patients' rights to privacy. Stephens (1994) makes the point that "When public policy is determined by balancing society's privacy interest against society's costs, one individual's right to privacy will weigh very little....At our peril do we abandon our privacy to the protection of federal government social engineers" (p. 1484).

Legal and Regulatory Protection of Confidentiality

According to Gostin et al. (1993), a recent US Department of Health and Human Services report found the combination of state and federal privacy rules to result in "a morass of erratic law, both statutory and judicial" (p. 2489). In the absence of specific statutory protection, confidentiality of medical information is based generally on the right to privacy (Smith, 1992, p. iii-v) and on the physician-patient privilege. The physician-patient privilege did not exist in common law, and no federal statute has been enacted to protect it. Therefore, most of the individual states have passed laws to protect the physician-patient privilege (Macdonald, Meyer & Essig, 1994, Sec. 19.03[1-a]). Alabama is among those states which have no statutory protection of doctor-patient confidentiality (*Day v. State*, 1979) except in the case of psychiatrists and psychologists (Code of Alabama, 1975, Sec. 34-26-2). As a condition of licensure, Alabama hospitals must assure that "records and information regarding patients shall be confidential," and patient records are considered to be the "physical property of the hospital" (Rules of Alabama State Board of Health, 420-5-7).

Horne v. Patton is the landmark case which established the legal precedent for protection of physician-patient confidentiality in Alabama. In deciding *Horne v. Patton*, the justices referred to a provision in Alabama's medical licensing statute which allows suspension or revocation of the license of any physician who "wilfully betrays a professional secret" (287 So.2d at 829). Interestingly, the licensing statute was subsequently revised and that section was removed (Code of Alabama, Sec. 34-24-360). Despite this change, *Horne v. Patton* remains precedent in Alabama. Cases in which *Horne v. Patton* has been cited and interpreted include *Day v. State* (1979), *Mull v. String* (1984), *Rudder v. Universal Communications Corporation* (1987), and *Crippen v. Charter Highland Hospital, Inc.* (1988). Significantly, in *Crippen v. Charter*, the Alabama Supreme Court cited *Horne v. Patton* as precedent in a case where a hospital, not a physician, released medical information without authorization. In *Rudder v. Universal*, a divided (6-3) Supreme Court gave the psychiatrist-patient privilege higher standing than the First Amendment rights of an investigative reporter and television station who were being sued for libel by the psychiatrist. A dissenting opinion by three justices would have given the First Amendment priority and required the psychiatrist to release his records. In *Mull v. String*, the Supreme Court recognized a limit on the *Horne v. Patton* precedent. In that case, it was determined that a physician was not liable for an unauthorized release of records to a hospital, since the patient subsequently sued the hospital and the records would have been discoverable by the hospital in the course of the suit. In many other states (Benesch, 1987, p. 18-19), but not all (Alexander, 1987, p. 9), courts have likewise decided that the act of filing a lawsuit constitutes waiver of confidentiality rights for records discoverable during the suit.

The effect of managed care on the physician-patient relationship is a continuing concern of the Alabama Board of Medical Examiners, which licenses physicians in the state. The board is currently considering a revision of licensing regulations to reflect the new realities of managed care and electronic medical records. The North Carolina regulation, which is being used as a model, includes a requirement that "intimate details of the patient's life be held in confidence" (Butgereit,

1995).

Confidentiality of medical information has also been the subject of federal case law and regulation. In *Whalen v. Roe* (1977) The U. S. Supreme Court upheld the State of New York's right to maintain a computer database of narcotic prescriptions, in order to discourage illegal prescribing or dispensing practices. Justice Stevens, writing for the unanimous court, stated, "We are not unaware of the threat to privacy implicit in the accumulation of vast amounts of personal information in computerized data banks or other massive government files....The right to collect and use such data for public purposes is typically accompanied by a concomitant statutory or regulatory duty to avoid unwarranted disclosures" (429 U.S. 589 at 605). In a concurring opinion, Justice Brennan wrote, "The Court recognizes that an individual's interest in avoiding the disclosure of personal matters is an aspect of the right of privacy....The central storage and easy accessibility of computerized data vastly increases the potential for abuse of that information, and I am not prepared to say that future developments will not demonstrate the necessity of some curb on such technology" (429 U.S. 589 at 606-607).

In *United States v. Westinghouse Elec. Corp.* (1980), the U.S. 3rd Circuit Court of Appeals sought to balance the public interest against the privacy of employee medical records. The justices noted that "in other cases in which a court has allowed some intrusion into the zone of privacy surrounding medical records, it has usually done so only after finding that the societal interest in disclosure outweighs the privacy interest on the facts of the case" (638 F.2d 570 at 578). The Court went on to articulate factors which should be considered in such balancing, including "the type of record requested, the information it does or might contain, the potential for harm in any subsequent nonconsensual disclosure, the injury from disclosure to the relationship in which the record was generated, the adequacy of safeguards to prevent unauthorized disclosure, the degree of need for access, and whether there is an express statutory mandate, articulated public policy, or other recognizable public interest militating toward access" (p. 578).

The Privacy Act of 1974 places limits on "the collection, maintenance, use and dissemination of personal information by federal agencies"(5 U.S.C. 552a). Medical data are included in the restricted information, but only federal agencies are bound by the statute. Federal regulations also control the participation of hospitals in the Medicare program. Regulation 42 CFR 482.24 (3) states "the hospital must have a procedure for ensuring the confidentiality of patient records. Information from or copies of records may be released only to authorized individuals, and the hospital must ensure that unauthorized individuals cannot gain access to or alter patient records. Original medical records must be released by the hospital only in accordance with federal or state laws, court orders, or subpoenas." (*Med-Reg,* 1995)

Though not legally binding, standards of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) virtually have the force of law, since hospitals face loss of Medicare revenue and almost certain bankruptcy if they lose JCAHO certification. The JCAHO's 1996 accreditation manual contains the following wording:

Intent of IM.2 Through IM.2.3

> The hospital maintains the security and confidentiality of data and information, and is especially careful about preserving the confidentiality of sensitive data and information. The balance between data sharing and data confidentiality is addressed. The hospital determines the level of security and confidentiality maintained for different categories of information. Access to each category of information is based on need and defined by job title and function. An effective process defines
>
> a. who has access to information;
> b. the information to which an individual has access;
> c. the user's obligation to keep information confidential;
> d. when release of health information or removal of the medical record is permitted;
> e. how information is protected against unauthorized intrusion, corruption, or damage; and
> f. the process followed when confidentiality and security are violated.
>
> Hospital policy establishes that medical records may be removed from the hospital's jurisdiction and safekeeping only under a court order, subpoena, or statute.
>
> The hospital addresses items a through f whenever it implements any new data and information collection, storage, and retrieval system(s). (JCAHO, 1995, p. 415)

The JCAHO manual goes on to give examples and recommendations for compliance with these standards, including separate storage for particularly confidential records, security codes, and limitation of terminal access to necessary functions. Note particularly the presumption of physical ownership of records by the hospital in the portion of the standard which limits removal "from the hospital's jurisdiction and safekeeping" (p. 415). This would seem to preclude a completely paperless system. Because of the power of the JCAHO, hospitals will strive to meet these standards scrupulously.

The U.S. Congress has also taken up the issue of medical informational privacy. In the 103rd Congress, Rep. Condit (D-CA) introduced H.R. 4077, the Fair Health Information Practices Act of 1994. After committee referral and public hearings, the bill died along with the Clinton administration's health reform legislation. Rep. Condit has reintroduced his bill in the 104th Congress as H.R. 435. At the time of this report the bill is being considered in the Commerce, Government Reform and Oversight, and Judiciary committees. The complete text of the bill runs to more than 90 pages, but a pertinent section is here quoted:

Sec. 2.(a), Findings.—The Congress finds as follows:

(1) The right to privacy is a personal and fundamental right protected by the Constitution of the United States.

(2) The improper use or disclosure of personally identifiable health information about an individual may cause significant harm to the interests of the individual in privacy and health care, and may unfairly affect the ability of the individual to obtain employment, education, insurance, credit, and other necessities.

(3) Current legal protections for health information vary from State to State and are inadequate to meet the need for fair information practices standards.

(4) The movement of individuals and health information across State lines, access to and exchange of health information from automated data banks and networks, and the emergence of multistate health care providers and payors create a compelling need for uniform Federal law, rules, and procedures governing the use, maintenance, and disclosure of health information.

(5) Uniform rules governing the use, maintenance, and disclosure of health information are an essential part of health care reform, are necessary to support the computerization of health information, and can reduce the cost of providing health services by making the necessary transfer of health information more efficient.

(6) An individual needs access to health information about the individual as a matter of fairness, to enable the individual to make informed decisions about health care, and to correct inaccurate or incomplete information (H.R. 435, 1995, Sec. 2-a).

The act, if passed, would preempt state laws with respect to the authority and duties of "health information trustees" (Sec. 304-a), the meaning of which is defined broadly to include virtually anyone within or without the healthcare system who has authorized access to medical information (Sec. 3-b-6). The only state laws excepted are public health and mental health statutes, which are allowed to be stricter than this law in prohibiting disclosure (Sec. 304-b), and laws requiring reporting of vital statistics, abuse or neglect, and protecting privilege of peer review activities (Sec. 304-f). If this or a similar bill passes and becomes law, then in most cases state law will no longer control medical record confidentiality issues.

Security Problems with Computerized Health Information Systems

The potential for a vast amount of health data to be stored in electronic form and to be shared over networks by users in many locations raises new security concerns. Health records contain information of interest to present or potential employers, insurers, creditors, news media, pharmaceutical manufacturers, government agencies, planners, and the merely curious. Commercial databases of healthcare information have already attracted the scrutiny of Congress and of the AMA (Miller, 1992). The Medical Information Bureau (MIB), located in Massachusetts, is financed by the insurance industry, which contributes information on clients as well as obtaining information on prospective insureds. The database currently contains medical information on more than 15 million people and is expanding rapidly (Doyle, 1995).

A typical health record might contain "demographic information, such as age, sex, race, and occupation; financial information, such as employment status and income; information about disabilities, special needs, and other eligibility criteria for federal or state subsidies; medical information, such as diagnoses, treatments, and disease histories, including mental illness, drug or alcohol dependency, acquired immunodeficiency syndrome, and sexually transmitted diseases; and social information, such as family status, sexual relationships, and lifestyle choices. This information is frequently sufficient to provide a detailed profile of the individual" (Gostin, et al., 1993, p. 2488). Demonstrating that security concerns are real, Lawrence (1994) reports on a recent study of highly automated corporations, including health and life insurers: "Corporations routinely handling medical, financial, and other personal information often do not have policies on confidentiality. When policies do exist, they often conflict with actual practices in the organization. In addition, policies are often made in response to prospective legislation or other threats, rather than proactively through rational analysis of privacy values and vulnerabilities" (p. 642).

Data security problems fall into three main categories: (1) unauthorized or unnecessary access or disclosure of medical record data, (2) unauthorized modification (change or deletion) of data, and (3) physical destruction or removal of hardware or data storage media. Several specific security concerns will now be addressed:

Blanket authorizations for release of medical records increase the risk of unauthorized (or at least unnecessary) disclosure of both paper and electronic records, but the potential for abuse is much greater with automated systems, because of the wider potential dissemination of the data released, and the opportunity for accumulation of personal information in large database repositories. Most patients have undoubtedly not read the release forms which they routinely sign on admission for inpatient or outpatient treatment at a health care facility, or when they apply for insurance. The reader is encouraged to examine release forms from local hospitals, and record request forms received from insurance companies, which will demonstrate that in many cases, the office or hospital is authorized to release any or all of a patient's medical information to virtually any entity with which there is some financial or medical relationship, including the patient's employer. Specifically note that there are no requirements to remove identifying personal information from the record before release, or to inform the individual of the identities of companies or individuals to whom information is released.

In Blue Cross Blue Shield of Alabama's "InfoSolutions" program, which offers electronic data exchange to physicians' offices throughout the state, patients are asked to sign a blanket release authorization, which allows Blue Cross to access electronic records directly from physicians' office computers. A database of medical information is to be created at Blue Cross which will include not only Blue Cross patients, but also data on patients with other insurance plans. All information thus acquired becomes the property of Blue Cross to be used in whatever manner Blue Cross deems appropriate, within the constraints of the law (*InfoSolutions Contract*, p. 2-3). "Blue Cross is entitled to develop patient identifiable uses of information for dissemination to User or to others,...including persons who are not parties or participants to or in the agreement" (*Database Regulations*, Sec. 7.0). Physicians are given reports of their own offices' use of the system, and patients may see which offices accessed their data, but neither physicians nor patients are notified of other (competitive/business?) uses, or of releases of the information by Blue Cross to other parties. An example of inappropriate use of such data occurred in California: "A man who told his physician that he had smoked marijuana in his youth was later denied insurance on the grounds that he had abused drugs. His insurer, it turned out, had obtained the information from the physician's electronic records system" (Doyle, 1995, p. 1).

The AMA is quite concerned with these privacy threats and has stated in its 1995 Policy Compendium that it "will engage in a major initiative to educate patients about the implications and consequences of blanket medical records releases, and educate patients about the need for possible legislative modifications" (Sec. 315.986). The AMA plans to promote federal legislation to "limit third party payors' random access to patient records unrelated to required quality assurance activities; limit...access to only that portion of the record (or only an abstract of the patients record) necessary to evaluate for reimbursement purposes; require that requests for information...be delineated and case specific; [and] allow a summary of pertinent information relative to any inquiry into a patient's medical record be provided in lieu of a full copy of the records (except in instances of litigation where the records would be discoverable)" (Sec. 315.987). The U.S. Congress is also concerned, and H.R. 435 addresses many of these issues: Sec. 111 limits the disclosure and use of medical information to the specific purpose for which the release was authorized, and limits the information released to the minimum required to accomplish the purpose. Sec. 112 requires authorization from the individual which must be specific (or at least descriptive) as to the information to be released, to whom, and for what purpose; and the proposed recipient of the information must give the individual a written statement of the intended uses of the information and to whom the information will be disclosed, before the authorization is signed. Model release forms and statements of use and disclosure are to be provided by the Secretary of Health and Human Services by July 1, 1996 (H.R. 435, pp. 27-34).

The American Civil Liberties Union notes that "most people have little choice about whether to let someone else see a record if such perusal is a condition of receiving benefits or a job....[The ACLU] would like to see the establishment of firewalls—narrow definitions of the information that any corporation or institution can ask an individual to release" (Stix, 1994).

Unauthorized access to and disclosure of medical information is a threat to patient privacy which must be considered in the design of all health information systems. When institutions assess their security risks, the results are often surprising: "Unlimited and uncontrolled access to sensitive information by a large number of employees without a patient care or business need for the information [is] a far more likely and significant threat than dial-up access by a hacker" (Miller, 1994, p. 311). Hayam (1994) agrees, stating that "well over 80% of all security infractions and malicious use of information systems is perpetrated by users within their legal authorization" (p. 117). Lawrence (1994) reports the case of *John Doe v. Shady Grove Adventist Hospital*, in which a respiratory therapist disclosed the diagnosis of an AIDS patient to his friends and family without authorization, resulting in a $4.5 million lawsuit (p. 640). In another AIDS-related case, *Doe v. Rite Aid of Pennsylvania*, an AIDS patient successfully sued a national drug store chain to prevent its reporting to employers the names of patients treated with HIV-related medications. The case is reportedly "the first in the nation to address the very real fear that employers will use health benefit records to learn an employee's HIV status" (*BNA*, 1995, p. 31-32).

Physical security of computers and storage media is a concern, especially as the health care system moves away from paper records and toward more dependency on computerized records for day to day medical care. A particularly devastating physical security breach occurred in Minsk, Byellorussia, in the aftermath of the Chernobyl nuclear disaster. "A gang of teenage thieves...destroyed irreplaceable data on the health of 670,000 people living in... the areas which bore the brunt of the fallout from Chernobyl....The loss of the data virtually wipes out, not only the work of the past four years, but also the possibility of effective treatment [of radiation-induced illnesses] and, in the future, prophylaxis" (Rich, 1990, p. 736). After a desperate search, "the thieves were arrested and the floppy disks were recovered—but they had been wiped. They were handed over to a forlorn team of computer experts who set about trying to recover at least some of the lost data from the disks" (p. 736).

Computer hardware and storage media are threatened not only by thieves, but also by natural disasters, fires, and by disgruntled present or former employees. In one case, "a state health official...took hundreds of computer tapes when he left office, allegedly with the intention of conducting research on them" (Lawrence, 1994, p. 640). In *Whalen v. Roe*, one of the factors in the Supreme Court's decision to allow a computer database of sensitive narcotic prescriptions was the

excellent physical security precautions exercised by the State of New York: "The receiving room is surrounded by a locked wire fence and protected by an alarm system. The computer tapes containing the prescription data are kept in a locked cabinet. When the tapes are used, the computer is run off-line, which means that no terminal outside of the computer room can read or record any information" (429 U.S. 589 at 594).

Modification of medical data may occur accidentally (e.g. through transcription or transmission error), purposely by health care personnel (e.g. falsification for self-protection, or vandalism), or purposely by an outsider (directly through a modem or network, or through introduction of a computer virus). There have been reports of viruses infecting medical systems (Ritchie, Taylor, Milne & Duncan, 1991). In one such case, "70% of the programs on the PC data disk had been altered by the insertion of an exogenous code into the standard computer instructions" (Juni, 1989, p. 811-812). "Statistically, the biggest threat of medical record sabotage is usually carried out by disgruntled employees" (Pechette & McKenzie, 1994, p. 14).

Strategies for Development of Health Information Computer Security Programs

There is much more than technology involved in developing and implementing a data security program. In fact, Agich (1994) believes that the technical issues are in many cases less difficult than the social issues. For example, in some systems, "any physician with a valid password can access any medical record whether or not he has any professional relationship with the patient in question" (p. 324). This is easy to fix technically, but the social skills required to prevent antagonizing this "most important group of users" (p. 324) are more difficult. Miller (1994) makes the point that "decisions about the controls to be implemented tend to be made by the team implementing new systems. These staff members usually do not have the authority to accept the significant risks that may hinge on the controls they have selected" (p. 305). Miller stresses that the risk of security breaches cannot be totally eliminated, and it is ultimately management's responsibility to balance the cost of the controls against the impact of potential breaches, and "if the costs of the available controls are too great, management may choose to accept the risks." In such cases, "the risk acceptance decision should be made by a member of the management team with sufficient authority to commit the institution to the magnitude of the risks accepted" (p. 310).

Part II: Recommended Data Security Strategy

Review of Models

"European legislation for protection of data confidentiality is more specific and encompassing than ours" (Robinson, 1994, p. 70). This may explain why many of the models of health information security systems are of European origin. In Norway, paper records are still required at all times, in addition to any electronic records which are maintained (Iversen, 1994). Norwegian hospitals are required to store records forever. In addition to general requirements for a security policy, a disaster plan, and protection from physical threats, one interesting Norwegian requirement is that in emergency areas, there must be a terminal which is accessible without a password or security card, to prevent the loss of valuable time in emergency situations. Of course, access to such terminals is closely monitored. Another interesting concept is that "physicians shall be able to authorise any other users for access to a particular patient's record, by transferring all or some of his or her rights to the other user on a temporal basis. A user getting transferred access rights cannot transfer those rights to others" (p. 55).

In England, the use of computer- based records is widespread. The paper record has always been considered the legal record, but "some General Practitioners...are now relying on their computer as the base record and printing out information when it is needed for transfer...or for legal purposes" (Barber & Douglas, 1994, p. 33). Barber and Douglas discuss the legal issues involved in proving in court that electronic records are authentic and reliable. It appears that the necessary controls are not now in place in England. The authors then describe and recommend the "digital signature" as a means to assure authenticity and integrity of computerized records. This involves sophisticated encryption with "private" and "public" keys, as well as encrypted "hash-totals" of parity checks or check digits within the electronic data. Taken together, these methods ensure that "it should be most unlikely that the material contained within the record entry can have been tampered with" (p. 36-37). Digital signature encryption may also make the records admissible as legal evidence, since no one but the possessor of the "private key" could digitally sign (authenticate) the record; and the risk of sending data to the wrong address is also minimized (Bengtsson, 1994). Even more accurate identification and authentication may be available in the future through the use of biometrics, such as fingerprints, eye recognition, or hand recognition (Llaurado, 1994).

In the United States, development of electronic medical records has been inhibited by the lack of uniform national laws or standards governing their form and use. "For example, it is believed that presently there are approximately 400 privately developed formats that are being used by the healthcare industry. This variance has made it nearly impossible for all participants to reach consensus on, and adapt to, uniform technology and create the necessary infrastructure for a national network" (Pechette & McKenzie, p. 16). The Information Management and Technology Division of The U.S. General Accounting Office has addressed this problem and made recommendations to congress to promote more rapid development of national standards (GAO/IMTEC, 1993). This publication also includes a list of the public and private agencies and organizations involved in the effort to develop uniform standards for medical data.

Gostin (1993) concludes his review of the legal issues in computerized health care with a list of needed actions, including 1) preemptive federal legislation to establish privacy safeguards, 2) a system of universal identifiers (preferably not the Social Security Number), 3) comprehensive national security standards, 4) establishment of a national panel to oversee privacy and security issues, and 5) a comprehensive educational effort to foster public awareness of privacy and security issues. Lawrence (1993) describes security measures which would satisfy JCAHO standards, including user identification/authorization, passwords, access control mechanisms, encryption, audit and transaction logs, backup and recovery mechanisms, special precautions for modem access, and mechanisms for protecting networks (p. 643). He also outlines the elements of an effective security policy for a large organization (p. 645).

One impressive and successful implementation of a health care security system is that of Beth Israel Hospital in Boston, developed by the Center for Clinical Computing at Harvard Medical School. Safran et al. (1995) describe their security measures and report a study documenting their effectiveness. "Because any clinician may be called on to care for any patient at the hospital, all clinicians are allowed access to the clinical data of all patients in the registry" (p. 189). Control of inappropriate access is provided by extensive logging of all use of the system, with all patients, employees, and physicians being allowed to see the names of those accessing their records. This "provides a self-policing mechanism and politely reminds each user that all patients' confidential information is protected by a tracking device" (p. 192). Access to different parts of the health database is also tightly controlled by location of the terminal and by job description of the employee. In most cases, the patient's full record is only available to physicians and nurses (p. 188-189). White (1986) has addressed the security needs of small healthcare entities such as physicians' offices, with specific recommendations for implementing secure systems in these settings.

Specific Recommendations for Implementing a Data Security System

Recommendation #1: Promote national laws, rules, and standards.

While not under the direct control of local health care organizations, the passing of uniform national laws and standards must be a high priority for anyone designing a data security system. Without this, all systems implemented now will continue to be in legal and technological limbo, and sharing of secure, reliable data among geographically dispersed institutions will be severely limited. Physicians and hospitals should use their influence in the community and with legislators to promote uniform national standards and laws for health information privacy and security.

Recommendation #2: Promote specific and informed consent for record release.

Regardless of the quality of security controls within the institution, generic, blanket medical record release authorizations make true security and confidentiality of medical information impossible. Language such as that in H.R. 435 would greatly reduce this security risk. Physicians and hospitals have the opportunity to take the lead in this important area and begin obtaining more specific, informed consent before being required to do so. This would be more time-consuming and complex than the current system of blanket releases, but it would also reduce legal liability for inappropriate release of medical information.

Recommendation #3: Control outside access to electronic records.

The particular risk of unauthorized access to medical data through modems or network connections should be addressed. Modem access should require a second password or a call-back procedure, or both, to confirm the identity of the caller. Data sent over networks or telephone lines should be encrypted, both for security and to assure authenticity and integrity (Barber & Douglas, 1994). Because of the security and confidentiality risks posed by large databases of medical information, and because of the potential liability risks in case of unauthorized disclosure, physicians and hospitals should be very cautious about allowing their electronic records to be accessed by any outside entities, including insurers (e.g. Blue Cross InfoSolutions) or commercial enterprises such as Physician Computer Network (PNC), Inc. If uniform national laws and standards are enacted, which require specific informed consent by the patient for each release and which control any re-use of the information by the recipient, then it may be possible to design medical information networks which properly address confidentiality concerns.

Recommendation #4: Develop a comprehensive data security policy.

The 1996 JCAHO standards require that a comprehensive policy be in place which addresses all aspects of security and confidentiality (RI.1.3 through RI.1.3.3; IM.2 through IM.2.3). Specific decisions and implementation of systems should be within the framework of this overall institutional policy. Development of the policy should be facilitated by a risk assessment process, with input from all involved areas and departments of the institution (Miller, 1994). The formal risk analysis will take time, but it will assure a more secure system based on actual needs and experience in each hospital's working environment and will make JCAHO compliance more certain.

Recommendation #5: Choose appropriate patient identifiers.

Even within an institution several identifiers may be in use and may require sophisticated software for harmonization and integration of data (Dardeen, 1994). On a larger scale, a national identifier is needed to allow sharing of data among dispersed systems. The

Social Security Number (SSN) is attractive because of its ready availability, but it has many problems relating to security and confidentiality (Gostin, 1993, p. 2488). Overall, it is preferable that a unique national health identification number be developed, separate from the SSN. As a compromise, some have used an encrypted form of the SSN to provide security without the cost of starting over with an entirely new system (Walsh & Qual, 1994). Each hospital should analyze all its inpatient and outpatient departments to eliminate all multiple or duplicate identifiers, and to define a single, unique identifier for all patients. The SSN should not be used, because of security concerns.

Recommendation #6: Use secure passwords or electronic signatures.

Secure passwords should consist of combinations of letters and numbers, which makes them much more difficult to discover by "hackers." All users should be instructed that "the password is equivalent to a legal signature and that under no circumstances should it be shared with anyone" (Safran, et al., 1995, p. 188). Passwords should be changed periodically, and all users must have the option of changing their password at any time if they suspect that it has been detected. Users should automatically be logged off the system after a short period (three to five minutes) of disuse of the terminal. Passwords must be promptly deactivated for all terminated employees to prevent sabotage of the system. Terminals should lock and sound an alarm if an illegal password is entered repeatedly (three times, or as recommended by Safran et al., a "small but random number" p. 188).

Even with these precautions, passwords alone do not provide full security, especially when medical information is shared over networks and telephone lines (France & Gaunt, 1994, p. 192). There remains some doubt about the legal admissibility of computerized records, even if an electronic signature system is used to provide "nonrepudiation" of authorship of the record (Gennusa, 1995, p. 19). These systems may be cumbersome to use, requiring a long private key (e.g. 138737390239347303) which the individual uses in encrypting the record, and a public key with which the recipient can decrypt the information. The private key and other identifying information could be encoded on a "Smart Card" carried by the physician (Klein, 1994). If the public key successfully decrypts the file, then it can be legally maintained that only the individual with the private key could have produced and authenticated it (Barber & Douglas, 1994; Gennusa, 1995).

All hospitals should use secure password protection as described in this recommendation, but at this time, an electronic signature system is not recommended. Because of the uncertain legal climate and the lack of uniform standards, it does not currently appear prudent to expend the time and financial resources required to implement such a system. Paper records with conventional signature authentication should be maintained for legal purposes. This recommendation is subject to review and modification as national standards are established and the legal status of electronic signatures is clarified.

Recommendation #7: Establish user, terminal, and data security levels.

The access of users to various portions of the database should be appropriate to their job descriptions. The system should allow this access to be individually controlled by user password. Likewise, computer terminals located in various areas of the institution should be restricted to the portions of the database appropriate for each department. For example, terminals in the finance office need not have access to the clinical database, and terminals in the laboratory should allow entry or modification of lab data, while those on nursing units need only allow reading of lab data. In compliance with JCAHO guidelines, the information itself must also be categorized as to sensitivity, and access should be limited accordingly. For example, certain mental health information might be accessible by password to only psychiatrists and psychologists, or only to the patient's individual psychiatrist, while more general medical information could be available to a larger number of practitioners. With the exception of certain sensitive information, it is more compatible with current medical practice patterns to allow physicians access to medical records of all patients in the institution, with appropriate controls as described by Safran et al. (1994). The increased time and expense of designing and installing a security system with this level of flexibility and sophistication will be more than justified in the long term by the increased level of confidence physicians and other users will have regarding confidentiality of medical information.

Recommendation #8: Maintain extensive logs of system use.

Both for monitoring and audit purposes, and to promote the self-policing character of the system, all users should be aware that their use of the system is being logged. Both patients and users of the system should be able to obtain detailed listings of all accesses to their own records, and should know how to report irregularities. System use should be monitored by a data security committee or officer, and all complaints or suspicious patterns of use should be investigated and acted upon promptly. Safran et al. have demonstrated that these measures minimize inappropriate access to medical information, while allowing clinicians relatively free access when appropriate (1995). The audit trail produced and the self-policing nature of the system will reduce the time and personnel needed for monitoring, thus saving costs in the long term.

Recommendation #9: Assure physical security and backup of the system and data.

The data security policy should address measures to protect the hardware and software from physical assault, including vandalism, burglary, sabotage, power outages, fires, and natural disasters. Regular data backups should be stored at a secure off-premises

site. The disaster contingency plan should include provisions for providing patient care without the computer system or data files in case they are destroyed. (See JCAHO, 1995, p. 415.) Despite the time and expense involved, hospitals have no option but to follow this recommendation.

Summary

There are strong incentives to computerize medical records in the present health care environment, yet medical information is frequently personal and is protected by privacy law and by centuries of a tradition of confidentiality. It is not possible to eliminate all risk of inappropriate disclosure and use of medical information, either in a paper or an electronic system. Computerization of records increases the potential for abuse, but with appropriate attention to security measures, medical data can be made reasonably secure while preserving accessibility for those who truly need the information. Both for technical and legal reasons, paper records are still necessary in 1995, to back up electronic medical databases.

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Sports Medicine And Science Camp

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Camps traditionally play a significant role in summertime activities of adolescents, often providing campers with experiences otherwise unavailable to them. In addition, these activities provide adults an opportunity to interact with and teach this important segment of the population. For health professionals, camps offer a multitude of training and research opportunities for those interested in children and adolescents. This year the first annual Sports Medicine and Science Camp (SMSC) was held at the American Sports Medicine Institute (ASMI), in Birmingham, Alabama. The camp emphasized three fundamental areas of Sports Medicine: 1) Injury prevention, treatment and rehabilitation, 2) Maximizing and maintaining human performance, ad 3) Promoting health and fitness. Programming combined short didactic sessions (15 to 20 minutes) with daily physical activities and clinical experiences for teenagers at all levels of physical fitness and athletic prowess.

ASMI (a non-profit organization) sponsored the program and provided space within their free standing facility for the daily activities. Staff and counselors were recruited from local health care organizations including HealthSouth Medical Center, Alabama Sports Medicine and Orthopedic Center, The Children's Hospital of Alabama, and the Department of Pediatrics, University of Alabama at Birmingham School of Medicine. Campers included males and females, ages 11-16 years. A local business provided scholarships for students with excellent academic records who were interested in the program but could not otherwise afford the tuition ($195.00/week). Additional financing and equipment were provided by local businesses to assist in keeping the camp reasonably priced. Marketing involved development and distribution of a brochure, appearances on radio and television shows, advertising in newspapers, and attendance at local camp fairs.

A total of forty-five adolescents attended camp. Daily activities were scheduled from nine to four Monday through Thursday, and Friday form nine to twelve. Nine sessions, each lasting three hours, were developed (Table One). Presenters were directed to limit lecturing and to design activities in a station-oriented manner that would be interactive, stimulating, and fun for the campers. Throughout the week, professional, Olympic, and elite amateur athletes were invited to speak their personal experiences with Sports Medicine professionals and facilities.

Table One: Daily Schedule

Day One:	A.M. -	Human Performance Profile (BP, ht, wt, skinfolds, 3-min step-test, sit-ups/min, max push-ups, vertical jump, Peak Expiratory Flow Rate)
	P.M.	Aerobic Fitness max treadmill, circuit aerobics class (step, slide, jump rope, obstacle course, hula hoop, shuttle run)
Day Two:	A.M. -	Acute Injury (casting, taping, braces, on field injury management)
	P.M. -	Weight Training (8-station workout with free weights and machine)
Day Three:	A.M. -	Biomechanics (EMG, throwing velocity, demonstration, golf swing video analysis)
	P.M. -	Nutrition (body composition analysis, food record analysis)
Day Four:	A.M. -	Surgery and Rehabilitation (arthroscopy)
	P.M. -	Cardiopulmonary Resuscitation
Day Five:	A.M. -	Sports Medicine Bowl

Following registration and orientation, the camp began with a Human Performance Evaluation. Campers learned to measure blood pressure, pulmonary function, skin folds, height and weight, and evaluate physical fitness through a three-minute step-test, one-minute of sit-ups, maximum number of push-ups and standing vertical jump. In addition to allowing the campers to evaluate their own fitness, this activity provided camp organizers with the beginning of a data base for physical fitness levels on a convenience sample of normal, healthy adolescents. During lunch, a registered nutritionist instructed the campers on how to complete a forty-eight hour food record. At the conclusion of the camp, participants received a computer analysis of their personal eating habits. The afternoon of Day One consisted of a discussion on exercise testing which included a demonstration of a maxi-

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mal treadmill exercise test and a two hour aerobics program. Aerobic stations included in the program were the slide, step, jump rope, shuttle run, hula hoop, and obstacle course.

Day Two of the camp started with participants learning about Acute Injury Management and Treatment. Supervised by Certified Athletic Trainers, the campers practiced the skills of ankle taping, casting, bracing, splinting, and management for a suspected neck injury. Each teen had the opportunity to case and tape. In the afternoon, a world champion power lifter demonstrated the proper use of weights and different strength enhancing exercises. The campers then completed two eight-station weight training circuits.

A visit to the surgery observation suite at Health-South Hospital began Day Three. After viewing parts of two total knee operations, a total hip replacement, and an elbow arthroscopy, James R. Andrews, M.D. (orthopedic surgeon) spoke to the group. Returning to ASMI, the campers next visited a Biomechanics Lab. They used Manual and Automatic Motion Analysis, Electromyography, a Force Plate, and Video Analysis to learn different techniques biomechanists use to help improve athletes' skills and performance. During this session each camper had their throwing velocity determined and an analysis of a golf swing. The afternoon concluded with a session in nutrition supervised by two Registered Dieticians. Emphasis was placed on evaluating each camper's own personal food record and body composition. Discussions were also held regarding pre-event meals, weight management, and fluid replacement.

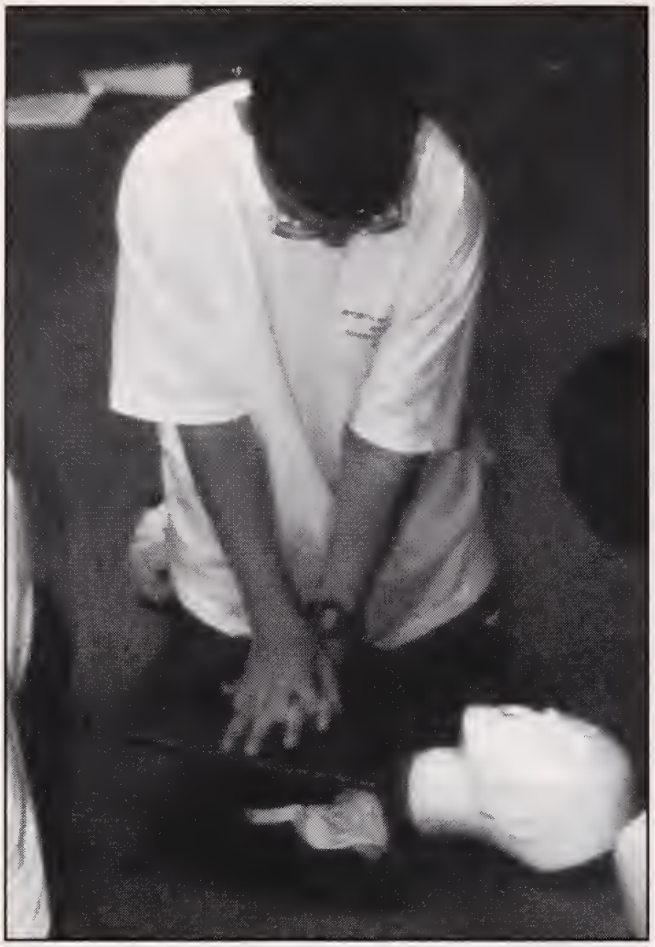
Day Four began with the campers receiving instruction in arthroscopy. Following instruction the campers practiced in the ASMI arthroscopic laboratory. Next, a physical therapist taught the campers commonly used exercises for injury prevention and rehabilitation. During lunch, a local physician discussed steroid use and abuse. The afternoon was spent learning Cardiopulmonary Resuscitation (CPR). The last day culminated with a Sports Medicine Bowl. Campers were placed on four-member teams and competed with one another in a question and answer session. The winning team received trophies. To obtain feedback from the campers, Likert scaled items were given which solicited their opinion about each activity. The results are shown in Table Two.

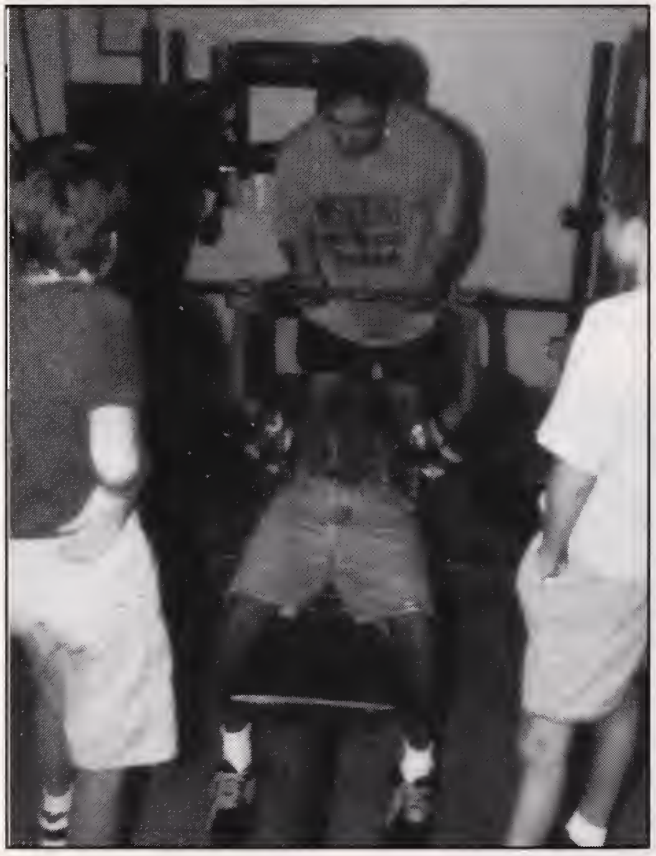
Throughout the week, camp participants were exposed to experiences aimed at assisting them in developing a healthy lifestyle, learning about techniques to improve athletic performance, and appreciating the application of science to sports. In addition to providing an exciting, educational week, teenagers interested in sports medicine experienced a wide range of careers available to them. Camp organizers hope to expand SMSC to additional locations in future years. The expansion will make the experience available to a greater number of young people as well as to augment the database on adolescent fitness begun this summer in Birmingham.

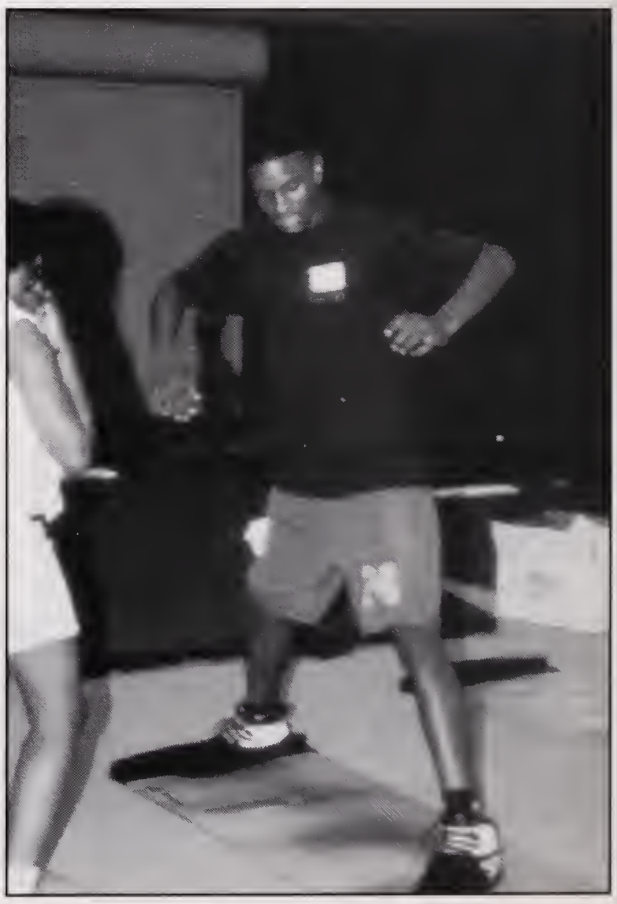
Table Two: Evaluation (Most Enjoyable Activities)

1. Visits from athletes
2. Observation of surgery
3. Weight training
4. Casting, taping, bracing
5. Cardiopulmonary Resuscitation

Dr. Feinstein is an Associate Professor in the Department of Pediatrics at the University of Alabama at Birmingham School of Medicine. He is a member of the Executive Committee of the Section on Sports Medicine and Physical Fitness of the American Academy of Pediatrics. Ms. Kristen Owen B.A. and Mr. Dan Guralnick B.S. are second year medical students at UAB and former college scholarship athletes at Division I-A schools.







Alabama Regional Medical Program*

Stephen P. Strickland, Ph.D.†

The story that follows attepts to chronicle the history of one state's involvement with the Heart Disease, Cancer and Stroke Amendments of 1965, subsequently known as Regional Medical Programs. It is a history of an enterprise fraught with problems, but energized by the will, skill and imagination of scores of public officials and citizens who, over the decade of the program's formal existence, bent every effort to insure the realization of its fundamental purpose: putting the best, most advanced medical knowledge within the reach of the greatest number of citizens. The following is a chronicle of the Alabama Regional Medical Program.

Alabama was among those few states that had a dual, very important advantage: its Regional Medical Program was contiguous with state boundaries, and within the state there was a single medical school. In the case of the University of Alabama School of Mediclne, a majority of doctors practicing in the state were its alumni.

An additional political advantage was the unique situation in Alabama, where the State Board of Health was comprised of the entire membership of the Medical Association of the State of Alabama (MASA). Between annual meetings, the Board of Censors of MASA served as the State Committee on Public Health (with no nonphysician members!) and also as the Board of Medical Examiners. Thus the Health Department and the Medical Association spoke with one voice, unlike most other states. And this was a distinct political advantage.

There was also an historical advantage in political terms. The senior senator from Alabama, Lister Hill, was one of the leading proponents of a strong federal role in health. Beginning with his partnership with Senator Harold Burton of Ohio in proposing the Hill-Burton Hospital Construction Act of 1946, and continuing through his years as principal Senate proponent of the National Institutes of Health, his colleagues in the Senate had referred to him as "Mr. Health." Given his interests, Hill had the great advantage of serving as chair of both the Committee on Labor and Welfare and of the Health subcommittee of the Appropriations Committee. The Senator kept in constant communication with health leaders in the state, particularly in the medical school. There had to have been a predisposition, in that important circle, to embrace the new federal program.[1]

A particular part of the general political advantage was that the president of the University of Alabama at Birmingham, Dr. Joseph Volker, Dean of the School of Dentistry before assuming the top post at the University, and Dr. S. Richardson Hill, Dean of the Medical School, subsequently Vice President for Health Affairs and later President of UAB, had long served in advisory posts at the federal level. More than many medical academicians, they kept close track of new federal health initiatives. Their aptitude in doing so, and their persuasive powers even with the generally conservative state legislature, made the University of Alabama School of Medicine an increasingly important institution in the state and region, and a beacon for very distinguished surgeons, physicians, and health care administrators from all over the country.[2]

One of the latter who had recently come to Birmingham and the Medical Center was Dr. Benjamin Wells, who for many years had been one of the senior administrators of the Veterans Administration Medical System, that extensive system of hospitals which, by the 1960's were affiliated with medical schools across the country. These three men, President Volker, Vice President Hill, and Dr. Wells were the planners of the Alabama RMP. They brought in others from the University and around the state.[3]

The first decision was to make Ben Wells the Director of the Alabama Regionald Medical Program. His first decision was to recruit the out-going president of the Medical Association of the State of Alabama, Dr. J.O. Finney, as Deputy Director. Together the two men involved the heads of the statewide Heart Association and Cancer Society, and the State of Alabama Health Department. They also involved a few businessmen whose qualifications included – but definitely were not limited to – their own networks in the corporate and civic sectors and all of whom were big Alabama boosters. (One of them, Winton Blount, a member of the University of Alabama Board of Trustees, would become Postmaster General in the administration of Richard Nixon.) Not only was the state medical society supportive of the new program, but as the second and long-time director of the Alabama Regional Medical Program, Dr. John Packard, later put it: The practicing physicians across the state were "too few and too busy to be defensive." Instead they were "grateful for any help" anybody would give them.[4]

With respect to the paucity of physicians, of Alabama's 67 counties, one had no physician, several had only two or three, and another twenty or so had but a few. The concentrations of the practicing physicians were in the large cities – Birmingham, Montgomery, Mobile, Huntsville – and the problem of georgraphical distribution was as keen or keener than anywhere in

*An adaptation of Chapter VIII from the monograph A History of Regional Medical Programs by Stephen P. Strickland, Ph.D.

The author is deeply grateful for the assistance of John M. Packard, M.D., Margaret S. Klapper, M.D. and S. Richardson Hill, Jr., M.D.

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the country.

The political sophisticates organizing the program knew that the challenge of doing so would not be enormous. But they also knew exactly what must be done and they proceeded to do it surefootedly and ultimately successfully. Beyond including all the major figures in the health care, health policy and health administration areas from an early point they focused on priorities and approaches that emphasized the obvious: heart disease, cancer and stroke. They knew that health care personnel other than physicians were essential, especially in a state with an underpopulation of doctors.

They also knew that there was not big money to be had through Regional Medical Programs. They knew this in several ways, first because the medical school faculty was, even in the 1960's, receiving very significant support through research grants from the National Institutes of Health. Further, the school itself was receiving a fair amount for health manpower training. Thus the one or two million dollars a year which might come to the Alabama Regional Medical Program was never seen as financially central to the medical school's future. Indeed, the Alabama RMP leaders' recognition of the fiscal reality and the articulation of that reality to everyone who become involved — from medical school faculty to community hospitals applying for grants — helped to ensure that few if any unrealistic expectations were generated.[5]

Beginning in 1968 through 1972, the total funds awarded to the Alabama Regional Medical Program, and in turn to projects, totalled just over $3 million. This sum, Dr. Packard later specified, amounted to "almost exactly twenty cents per citizen per year."[6] Inasmuch as this relatively modest funding had been anticipated, it compelled RMP to give to potential applicants two "directions" simultaneously. The first was to advise virtually every group applying for project funds to submit the leanest possible budget — and not even think about spending large sums of money for new equipment! Second, if the budget was out of line with guidelines, the rest of the funds would have to come from other sources. The other pattern which recognition of fiscal realities encouraged was that of supporting complementary efforts. For example, the ARMP joined with the Appalachian Regional Commission in a program to encourage physicians to locate in rural counties of the northwestern part of the state, and with the VA in establishing the Tuskegee AHEC, which is still active today.

Despite the controversy that arose when the original legislation was introduced in Congress, regarding whether the program would affect traditional patterns of medical care and the consequent prohibition on the activities that might do so, the Alabama regional advisory group set certain objectives and arranged them in priority order.

> "These objectives are: 1) improvement of the delivery of health care especially emergency medical care and care in rural areas; 2) manpower development; and 3) continuing education."

The concrete programs undertaken in pursuit of these aims included one simple one which had an unusual twist. While the first emphasis was on the killer diseases, there was an underlying need: Not since the public health surveys of the Depression years had there been a systematic county-by-county assessment of medical resources and health care needs of the people of the state. Thus one of the first projects developed and funded by ARMP was such a survey. To do so, the program enlisted an important, established, well-respected and completely non-threatening network of professionals, the county agricultural agents. If not unique, this was most unusual and in a quiet way, most inventive. As Dr. Packard said many times, the whole approach of the Alabama RMP was to be helpful but not threatening.

Another obvious need in Alabama as elsewhere was for emergency medical services. This situation also reflected the dispersal of population, sometimes in communities far from well-equipped hospitals or even community hospitals with emergency care capacity. Regarding training, the program helped develop and sponsor the training of allied health personnel that linked UAB's Regional Technical Institute with the 18 junior colleges in the state.

Early in the ARMP's tenure, a model system was developed by the Birmingham Emergency Medical Services Committee, with equal attention given to emergency medical training for technicians and to transportation of the critically ill. Professional EMS team members from the system went on the road to do demonstrations in cities throughout the state, often resulting in the formation of local EMS Committees made up of professionals from existing hospitals clinics and fire and police departments. This activity spurred the development of legislation which, enacted in 1971, required licensure of ambulance services and the establishment of a State Emergency Medical Services Advisory Board to function under the State Board of Health. Rules, regulations and standards were in effect by 1973 and helped direct subsequent ARMP projects as to transportation, communication and EMS training.[8]

Projects concerning the care and transportation of the critically ill newborn were a prominent part of the EMS Services. They addressed the particular needs of these tiny patients through the establishment of levels of care nurseries in cities of Alabama, education of nurses and physicians for these nurseries and transportation of the babies to the appropriate nursery.

Among other simple but imaginative programs which began fairly early was the Medical Information Service via Telephone (MIST). This too related to the origins of the national program, and specifically the information gap perceived by President Johnson between the best, most advanced knowledge at the fingertips of the most advanced scientists and practitioners on the one hand, and on the other, the understanding and capacity of physicians far removed from centers of medical excellence. The Alabama telephone service was the brain child of Dr. Cliff Meador, Dean of the medical school and it was overseen, expanded and refined over the next decade by Dr. Margaret S. Klap-

per of the medical faculty who was to become, in 1973, Executive Director of ARMP. It involved, on the one side, primarily internists, cardiologists, oncologists and pediatric physicians on the medical school faculty; on the other side were physicians serving in small towns and rural areas. As it was subsequently described:

> "The operation of this program is relatively simple. Incoming and outgoing WATS lines with accompanying syntrex tie lines and a recorder comprised the hardware. An administrative assistant from the division of continuing education coordinates the endeavor. And an operator sufficiently knowledgeable in the medical sciences to "field" the calls and pick out the personnel. This operator is on duty from 8am to 5pm five days a week.... Faculty participate through a structured oncall scheduling and electronic alerting devices help assure promptness of response. The pilot study program included at first four counties, one rural, one urban, and two intermediate-sized.[9]

In the beginning phase, there were various concerns about the efficacy of the program. Would the whole plan be viewed simply as a scheme to increase referrals to the medical center? Would practicing specialists consider their consultative fees in jeopardy? Would enthusiasm of the program wane? Would persons other than practitioners and health professionals learn the telephone number, seek information and use it unethically or otherwise adversely? Would practitioners object to identifying themselves and object to having their advice recorded? The recording was included as part of the program, so that excerpts could be analyzed for-modifications of the program and for educational planning.

Toward the end of the six-month pilot period, it was clear that physicians from all over the state were participating. Within the first two years, almost 35% of the practicing physicians in the state outside of Birmingham (where a WATS line would not be needed) had used the system. More than 100 faculty members had responded to more than 1200 calls, and more that 3,000 pages of library material had been sent as follow-up to the telephone consultations.

Gradually MIST was extended. As Dr. Klapper recalls: "It lent itself well to other feasibility studies such as MIST-VAH (linking the VA hospitals to the medical center, and MIST-TRI, attempting EKG transmission via telephone from three counties). MIST facilitated what we referred to as shared patient care whereby the patient could be cared for by the local physician with periodic visits to the medical center; the local physician and faculty physician communicated via MIST."[10] MIST was very quickly made available to all health professionals. The tape libraries for physicians and nurses were purchased through the Wisconsin RMP and utilized until Wisconsin discontinued it. Monitoring of MIST calls very quickly went from recording to data sheets and punch cards, to computer record keeping.

When ARMP terminated in 1976, 130,575 MIST calls had been processed. But the program continued in Alabama. And with the support from the National Institutes of Health and its National Library of Medicine, such programs were developed and expanded elsewhere.

Within a few years, MIST ceased to depend upon the hospital operators to handle night and week-end calls and the MIST operation became available "around-the-clock." In 1982, nationwide WATS lines were added. It housed the Dial Access Tapes Library of the Southern Medical Association for a number of years. It remains the access line for the critical-care Transport Services of the University of Alabama Medical Center, with its national reach. MIST celebrated its twenty-fifth anniversary in 1994. By September 1995 MIST had handled over 1,400,000 calls.

The physician shortage in Alabama also meant that the emphasis on training programs for nurses, physicians' assistants, and other allied health personnel was embraced by physicians. In Alabama as in many other places, the Regional Medical Program established a consistent pattern and advantage in the first five years. By supporting dialogues, planning sessions, and overall communication between and among professional groups not accustomed to such on a regular basis, but seeming to welcome it, it brought the University and its medical school closer to professional people all over the state.

The interaction went further. Before the end of the program, not only was ARMP participating in regular planning activities with the State Board of Health, but also with the Comprehensive Health Planning agency. All the federally supported health program administrators met together from time to time. As Dr. Packard remarked: "We were in bed together as well as working in the field together."[11] What he may have had specifically in mind was that the nurse educator in charge of personnel training programs for the Regional Medical Program was married to the physician who directed the State C.H.P. But beyond that, communication and cooperation between the Alabama Regional Medical Program and all the other agencies concerned with health matters remained remarkably consistent and constructive from beginning to end.

One of the most unusual collaborations was that involving the county agents, who had been recruited to undertake the early health needs survey. Called the Health Extension Learning Program (HELP), this was a cooperative effort of Auburn University Extension Division, the State Board of Health and the School of Community and Allied Health Resources (now the School of Related Health Sciences) at UAB, beginning in 1971. The Dean of the School of Medicine Dr. Meador — the son of a veterinarian also worked with the Agricultural Extension Service — conceived the idea, and all parties agreed to try it.

Dr. Margaret Klapper summarized this idea: "This network of county agents had completely eradicated hog cholera from Alabama by including education of the rural public as the only added ingredient [to the scientific effort]. Why then should a state of affairs be

tolerated wherein the farmers knew more about the health of their livestock than about their children, themselves and their families? Project HELP operated upon the premise that the approach to human disease does not differ fundamentally from that successfully used in animal husbandry."[12]

Topics addressed through HELP included emergency and acute care; preventative dental practices; arthritis awareness; cancer awareness and early detection. The mechanism which operated in project HELP provided a stable vehicle through which almost any health education or disease prevention program could be implemented.

As Cornelius L. Hopper, M.D., then chairman of the board of the Tuskegee Area Health Education Center, wrote in 1976: "Regrettably, we must note the impending departure from the National and State scene of the Regional Medical Program as a formal entity. The positive force that APMP brought to bear on Alabama Health in its few short years of existence would require volumes to describe. The communications, the coordination, the spirit of cooperation between the diverse elements that make up the Alabama "health establishment" (and that we now take for granted) are but a few of the fine legacies of this organization. As one of the "parents" of TAIIEC, the ARMP and the numerous individuals that created its substance and success and accorded our special thanks at this time."[13]

Before the Alabama RMP was forced to cease operations in October 1976, it had, during nine active years, funded over 100 programs. A number of them were continued with other support, often that of the University of Alabama at Birmingham. Some, such as the MIST program and several Area Health Education Programs, continue today.

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Alabama Laws On Drug Testing In The Work Place

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There are three primary Alabama laws that deal with employee drug testing in the work place. The Alabama Legislature in the 1995 regular session passed a law which encourages employers to promote a drug free work place program in exchange for lower rates on workers' compensation insurance. In addition, both the workers' compensation law and the unemployment compensation law have specific provisions governing the use of drug testing in determining eligibility for benefits. This article will review the legal and clinical requirements for effective employee drug testing with emphasis on physician participation in the process.

DRUG FREE WORK PLACE

This law permits (but does not require) employers to implement a drug free work place program which can qualify the employer for a 5% premium discount under the employers workers' compensation insurance policy. Programs are certified by the Alabama Department of Industrial Relations as meeting the requirements of the act.

A drug free work place program must contain the following elements:

1. A written policy statement which identifies the type of testing an employee may be required to submit to, the basis for determining when the test is required and actions the employer may take against an employee on the basis of a positive confirmed drug test.
2. Substance abuse testing which meets the requirements of the act.
3. An employee assistance program or a resource file of providers, including drug and alcohol abuse programs, mental health providers and other organizations available to assist the employee.
4. Semiannual education programs on substance abuse and its effect on the work place.
5. Supervisor training consisting of a minimum of two hours instructions on how to recognize signs of employee substance abuse, how to document signs of employee substance abuse, and how to refer substance abusing employees to the proper treatment providers.[2]

Employers not having a substance abuse testing program in effect on July 1, 1996 are required to provide at least a 60 day notice to all employees that a substance abuse testing program is being implemented before the beginning of actual testing. An employer is required to conduct drug testing in the following circumstances:

1. After extending an offer of employment, provided that the employer can limit testing of job applicants if conducted on the basis of reasonable classification of job positions.
2. Reasonable suspension testing when there is a belief that an employee is using or has used drugs or alcohol in violation of the employer's policy based on observable phenomenon or physical symptoms while at work, abnormal conduct or erratic behavior while at work, a report of substance abuse provided by a reliable source, evidence that an individual has tampered with any substance abuse test during the course of his or her employment, information that the employee has caused or contributed to an accident while at work or evidence that the employee has used, possessed, sold, solicited or transferred drugs while working or while on the premises of the employer.
3. Tests conducted as a part of a routinely scheduled employee fitness-for-duty medical examination.
4. If the employee in the course of employment enters an employee assistance program or a rehabilitation program as a result of a positive drug test. If the employee voluntarily entered the program, follow-up testing is not mandatory but if conducted must be accomplished at least once a year for two years following completion of the program.
5. If an employee has caused or contributed to an on the job injury.[3]

The act is quite specific regarding the qualifications of persons permitted to take or collect a specimen for a drug test. A physician, a physician's assistant, a registered professional nurse, a licensed practical nurse, a nurse practitioner or a certified paramedic who is present at the scene of an accident as well as any qualified person certified or employed by a laboratory which is in turn certified by the National Institute on Drug Abuse, the College of American Pathologists or the Alabama Department of Human Resources may take or collect a specimen for testing. Specimens must be

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collected with due regard to the privacy of the individual providing the specimen in a manner reasonably calculated to prevent substitution or contamination of the specimen. Specimens must be documented to include labeling so as to preclude the likelihood of erroneous identification. An opportunity must be given the employee to record any information relevant to the test including identification of currently or recently used prescription or nonprescription medication and other medical information which is to be taken into account in interpreting any positive confirmed results. Both initial and confirmation testing on drug specimens must be performed in a laboratory approved by the National Institute on Drug Abuse or the College of American Pathologists. The laboratory must have written policies to ensure proper chain of custody and follow proper quality control procedures. These indude use of internal quality controls to check the performance and calibration of testing equipment, internal review and certification processes for drug test results, security measures to preclude adulteration of specimens and tests results and other necessary and proper actions to ensure reliable and accurate drug test results. It is important to note, however, that testing procedures under the drug free work place law are not directly tied to US Department of Transportation (DOT) regulations governing procedures for transportation work place drug testing programs as are both the workers' compensation and unemployment compensation provisions discussed later in this article.[4]

All positive initial tests must be confirmed using gas chromatography/mass spectrometry or an equivalent or more accurate scientifically acceptable method approved by the National Institute on Drug Abuse. If an initial drug test is negative, the employer may seek a confirmation test. The law requires that laboratories must provide technical assistance to employers, employees or job applicants for the purpose of interpreting any positive confirmed tests results which could have been caused by prescription or nonprescription medication taken by the employee or job applicant.[5]

The law further provides that no physician/patient relationship is established or created between an employee or job applicant and a medical review officer or any person performing or evaluating a drug test conducted under the provisions of this law. All information collected by employers, laboratories and employee assistants programs is confidential and may be released only with the written consent of the person tested or by subpoena. Information on test results may not be used in any criminal proceeding against the employee or job applicant. The act becomes effective on October 1, 1995.

WORKERS' COMPENSATION

The Alabama workers' compensation law, which provides payment for medical expenses and compensation for work related injuries, provides specific grounds for denial of compensation benefits related to drug use. The law provides that no compensation shall be allowed for an injury or death caused by an accident due to the injured employee being intoxicated from the use of alcohol or being impaired by illegal drugs. A positive drug test constitutes a conclusive presumption of impairment resulting from the use of illegal drugs. Also, no compensation is allowed if the employee refuses to submit to or cooperate with a blood or urine test after an accident, provided that the employee is first warned in writing by the employer that such refusal could forfeit the employee's right to benefits under the worlcers' compensation law. Drug tests under this section of the law must be conducted and evaluated under the standards adopted for drug testing by the US Department of Transportation (DOT) regulations.[6] It is important to note that under the workers' compensation law, unlike the unemployment compensation law discussed below, there is no equivalency for drug testing standards. Stated another way, in order for the test results to establish a conclusive presumption of impairment, the drug testing facility must meet the (DOT) standards. It is also important to note that a positive drug test is grounds for denial of wage compensation but not for denial of payment for medical expenses of a work related injury. The Alabama Department of Industrial Relations has issued an opinion that confirms that a positive drug test, standing alone, does not alter the obligation of the employer to pay for medical care provided for worker related injuries under §25-5-77.7

UNEMPLOYMENT COMPENSATION

The Alabama unemployment, compensation law denies unemployment benefits to individuals discharged for misconduct. Misconduct is defined in the law to include the use of illegal drugs after previous warning or the refusal to submit to or cooperate with a blood or urine test after previous warning. A confirmed positive drug test constitutes a conclusive presumption of impairment by illegal drugs. If the employee had been warned that a positive drug test could result in dismissal under a employer drug testing policy, then no compensation benefits are allowed to an employee having a confirmed positive drug test. Drug testing must be conducted and evaluated according to standards established by the US Department of Transportation or "standards shown by the employer to be otherwise reliable". This language should allow employers some flexibility in utilizing positive drug tests obtained from facilities which may not meet all of the requirements of the federal regulations. Note that under this section of the law a confirmed positive drug test can only be used to deny benefits if the employee has been previously warned in writing that either a positive test result or refusal to submit or cooperate with blood and urine tests could result in termination of employment.[8]

DOT REGULATIONS

The Federal Department of Transportation has issued regulations setting standards for the conduct of drug and/or alcohol testing.[9] These regulations were

developed in response to congressionally mandated drug and alcohol testing programs for employers in the transportation industry. The regulations provide detailed and specific requirements for specimen collection procedures, qualifications and training of laboratory personnel, laboratory analysis procedures, quality assurance and quality control, reporting of tests results and confidentiality. The regulations cover both drug and alcohol testing and require that a medical review officer (MRO) assume responsibility for key aspects of the drug testing program. By definition, a MRO is a licensed physician (medical doctor or doctor of osteopathy) who is responsible for receiving laboratory results generated by an employer's drug testing program. He or she must have knowledge of substance abuse disorders and have appropriate medical training to interpret and evaluate an individual's confirmed positive test result together with the employee's medical history and any other relevant biomedical information. The MRO may not be an employee of the laboratory conducting the drug test unless there is a clear separation of function within the laboratory to prevent appearances of conflict of interest. The role of the MRO is to review and interpret confirmed positive test results, to establish confidential communications with the tested employee to discuss the results of the examination and, where appropriate, to refer the employee to the employer's assistance or rehabilitation program.[10]

The regulations also contain detailed instructions on procedures to be used for sample collection, identification, handling and accountability, including chain of custody. Collection personnel are responsible for measuring the temperature of the urine sample, securing and properly labeling the sample, and preparing it for shipment to the laboratory for testing.[11] Laboratory analysis procedures include detailed requirements for receiving, storing and processing of specimens, conduct of initial tests confirmatory tests using gas chromatography/mass spectrometry techniques and standardized reporting of results.[12] There are corresponding provisions relating to requirements for breath alcohol testing and the reporting of those results.[13]

As noted previously, only the workers' compensation law, of the three Alabama laws related to drug testing, requires specific compliance with all of the DOT regulations. The unemployment compensation law requires drug testing in accordance with standards established in the DOT regulations or "standard shown by the employer to be otherwise reliable". The drug free work place law does not specifically incorporate or adopt the DOT standards but does require testing by certified laboratories, confirmation testing and chain of custody. It is clear that an employer drug testing program that is designed to meet the requirements of all three laws must satisfy the DOT regulations.

CHAIN OF CUSTODY

For the results of a positive drug test to be useful in court or in administrative hearings, it must be admissible as evidence under Alabama law. A key component of admissibility is the concept of chain of custody. The Alabama Supreme Court has said that the chain of custody is composed of "links". A "link" is anyone who handled the item. Each link must be identified from the time the item was created. In order to show a proper chain of custody, the record must show each link and also show the following with regard to each link:

1. The receipt of the item;
2. The ultimate disposition of the item; and
3. The safeguarding and handling of the item between receipt and disposition.

If a proponent of evidence fails to identify a link or fails to show for the record any one of the three criteria as to each link, the result is a missing link and the item is inadmissible.[14] Proof of an unbroken chain of custody is required in order to establish sufficient identification of the item and continuity of possession so as to assure the authenticity of the item. In order to establish a proper chain, a proponent must show a "reasonable probability that the object is in the same condition as, and not substantially different from, its condition at the commencement of the chain."[15] A chain of custody need only be approved to a reasonable probability. One need not to negate remote possibilities of substitution, alternation or tampering with the item in order to establish a proper chain of custody. If there is conflict in the evidence concerning the chain of custody, the item may be properly admitted into evidence, but the court or hearing officer can decide what value to place upon the evidence.[16] Chain of custody requirements apply to the admission of evidence in administrative hearings as well as court proceedings.[17] Alabama's drug free work place law defines chain of custody as the methodology of tracking specified materials, specimens or substances for the purpose of maintaining control and accountability from initial collection to final disposition for all of the materials, specimens or substances and providing for accountability at each stage in handling, testing and sorting materials, specimens or substances and reporting tests results.[18] The DOT regulations define chain of custody as procedures to account for the integrity of each urine or blood specimen by tracking its handling and storage from point of specimen collection to final disposition of the specimen. With respect to drug testing, these procedures require that an appropriate drug testing custody form be used from time of collection to receipt by the laboratory and that upon receipt by the laboratory an appropriate laboratory chain of custody form accounts for the sample within the laboratory.[19] These definitions are generally in accord with Alabama case law on the issue.

Careful documentation of the chain of custody of a specimen is essential to the ultimate admissibility of any positive drug test in court or in an administrative hearing. Chain of custody forms must be legible and entries must reflect the full name of the individual handling the specimen, as well as the date and time of acceptance or transfer. If specimens are mailed or shipped, it is important to maintain shipping documents and receipts. Collection and laboratory person-

nel must be carefully trained in the proper execution of chain of custody documents. If a positive drug screen test is not admissible at a trial or hearing, the entire purpose of employer's drug testing program is negated.

CLINICAL CONSIDERATIONS

There are several clinical considerations in the interpretation of urine drug screens. The first is the analytical technique or method utilized to perform the test. Radio immunoassay (RIA) and enzyme immunoassay (EIA) are the most accurate techniques for the initial survey in detecting the presence of drugs in the urine specimen. RIA and EIA can be very specific for compounds, but metabolites often cross react. Because of cross reaction all positive results are confirmed by gas chromatography/mass spectrometry (GC/MS). GC/MS eliminates false positive results for all practical purposes. There are also other sophisticated methods available in the technical setting.[20] By utilizing laboratories certified by one of the entities referred to above, the clinician interpreting the report is assured that the technical aspect of the urine drug screen is performed properly.

Secondly, false negative and false positive results should be considered in every urine drug screen report. False negative results occur more easily than false positive results. This is because once a test is screened negative it is not tested further nor is the urine specimen retained for further testing unless requested. False negative results may be related to adulteration or a variety of other factors which have been outlined in previous publications.[21]

Thirdly, it is important to emphasize that the standards established by the DOT require that the following drugs be included in the initial urine drug screening panel: a) marijuana metabolite, b) cocaine metabolite, c) opiates, d) phencyclidine, and e) amphetamines. Many laboratories include only the drugs listed in this panel in their aroutine drug screen." Benzodiazepine, a commonly abused sedative drug, is not included in some drug screening panels and should be considered as a drug of abuse. Meperidine (Demerol) is not detected by EIA techniques and if suspected as a drug of abuse, should be specifically requested to be included on the initial screening panel. Similarly, the newer opioids present special considerations. Nalbuphine (Nubain), butorphanol (Stadol), buprenorphine (Buprenex), fentanyl (Sublinase and Innovar) and sufentanil (Sufenta) are not routinely available on urine testing drug profiles. Dextromethorphan (as in Robitussin DM) is not detected by GC/MS assay. Therefore, a "negative" test report is not to infer their absence unless one has specifically requested the suspected drug of abuse to be included in the testing profile. The ingestion of poppy seeds (bagels, poppy seed calces, etc.) can produce a "true positive" opiate urine report. Differentiation between opiate abuse and poppy seed ingestion requires special consideration.

Reviewing a urine drug screen and accepting a "negative" report requires understanding or these multiple factors which play into the clinical consideration for an accurate interpretation of the report. In addition, although "negative" reports are the usual scenario, a positive test result does not automatically identify an individual as having abused drugs. A clinician with a detailed knowledge of possible alternate medical explanations is essential to the review of the results. This review should be performed by a Medical Review Officer (MRO) prior to the transmission of the results to employer/administrative officials.

SUMMARY

Alabama law related to employee work place drug testing consists of the newly enacted drug free work place program, the workers' compensation law and the unemployment compensation law. These laws contain specific requirements relating to the performance of employee drug testing. Physicians will play a key role in the management, supervision and implementation of employer drug testing programs and should become familiar with state and federal laws and regulations pertaining to the operation of those programs.

1. Act 95-535 effective October 1, 1995.
2. Act 95-535, Section 4.
3. Act 95-535, Section 6.
4. Act 95-535, Section 6.
5. Act 95-535, Section 7.
6. Ala Code §25-5-51.
7. Opinion Letter Dated 12/14/92 by Craig A. Donley, Assistant General Counsel, Department of Industrial Relations.
8. Ala. Code §25-4-78.
9. 49 C.F.R. 40.1 et seq.
10. 49 C.F.R. 40.33.
11. 49 C.F.R. 40.25.
12. 49 C.F.R. 40.30.
13. 49 C.F.R. 40.53 to 40.83.
14. Ex parte Garrett, 608 So2d 337 (Ala. 1992).
15. Rosie Lee Kennedy v. State, 1995 WL 127146 (Ala.Cr.App. 1995).
16. Smith v. State, 628 So2d 1032 (Ala.Crim.App. 1993).
17. Shannon Logan v. Personnel Board of Jefferson County 1995 WL 111671(Ala.Civ.App. 1995); Miller v. State Department of Corrections, 640 So2d 977 (Ala.Civ.App. 1994).
18. Act 95-535, Section 2(2).
19. 49 C.F.R., 40.3.
20. Lowinson, J.H., et al; Substance Abuse A Comprehensive Textbook, 2nd Ed. 1992; Williams and Wilkins, Baltimore, MD.
21. Summer, G.L.; Practical Considerations in the Interpretation of Urine Drug Screens, Alabama Medicine, December 1992; Reprints available upon request.

Therapeutic Uses Of Botulinum Toxin (Botox)

*Larry W. Epperson, M.D.**

Botulinum Toxin is now considered the treatment of choice for Blepharospasm, Torticollis, Spastic Dysphonia, and Hemi-Facial Spasm with other indications forthcoming," Jancovic, New England Journal of Medicine, 1991

Botulinum toxin (Botox) is a large protein produced by Clostridium botulinum which can be crystallized in a stable form. This potent neuromuscular paralyzing agent has emerged as an effective therapeutic agent for treating patients with disabling muscle spasms of the neck and limbs, eye and facial disorders, spasmodic dysphonia, head tremor, and in refractory cases of spasticity, muscle spasms and rigidity. The use of botulinum toxin type A in the chemical denervation of extraocular muscles was pioneered by Dr. Scott in 1980.[3] The botulinum toxin chemically denervates the muscle by binding to presynaptic cholinergic terminals and inhibits the release of acetylcholine. The muscle is functionally denervated and atrophies. Subsequently, the muscle develops new extra-junctional acetylcholine receptors. The terminal axon begins to sprout new branches and forms new synaptic contacts on the adjacent muscle fiber receptors. The botulinum toxin transects all fascial planes in an individual muscle. Within three to six months, the paralyzing effects of the botulinum toxin begins to leave. Currently Botox is used in the treatment of blepharospasm, hemi-facial spasm, oromandibular dystonia, cervical dystonia, writer's cramp, spasmodic dysphonia, and in refractory cases of spasticity and rigidity.

The term dystonia refers to a group of neurologic disorders characterized by sustained contractions of agonist and antagonist muscles. This causes a twisting and repetitive movement or abnormal posture. Dystonia is classified as idiopathic (primary) or symptomatic (secondary) forms. The symptomatic form may result from metabolic disturbances (Wilson's Disease, Gm_1 and Gm_2 gangliosidosis) or from brain injury (stroke, trauma, birth injury, encephalitis or neuroleptic medication). No biochemical or pathologic marker has been identified for primary dystonias. The diagnosis is based on clinical criteria that can be highly variable. Dystonia can be classified into early onset before the age of 12 and adult onset after the age of 20. The younger the age of onset, the more likely that the dystonia will become severe and spread to involve multiple parts of the body.[2] The older the age of onset, the more likely the dystonia will probably remain focal. Anatomical distribution of the dystonia is helpful in categorization.

A focal dystonia indicates that only a single area of the body is affected. Focal types of dystonia includes; blepharospasm, hemi-facial spasm, limb dystonia (writer's cramp), and cervical dystonia. The most common focal dystonia seen in movement disorders is cervical dystonia such as torticollis. Cervical dystonia, however, can vary from a torticollis to retrocollis, laterocollis, and anterocollis. Segamental dystonia describes a dystonia that spreads to effect a contiguous body part. The most common segmental dystonia is known as cranial segmental dystonia, commonly referred to as Meige's syndrome. Generalized dystonia is defined as comprising leg involvement along with another area of the body. Hemi-dystonia is a dystonia affecting one half of the body.

Blepharospasm is defined as intermittent or persistent involuntary eyelid closure, usually bilaterally. This is produced by spasmodic contraction of the orbicularis oculi muscles with subsequent increased blinking, intermittent eyelid spasms, forced eyelid closure usually accompanied with retro-orbital pain. Classically, blepharospasm is made worse with bright light, fatigue, relaxation, listening, and looking up. It improves with action, concentrating, and looking down.

Hemi-facial spasm is a chronic distressing and embarrassing movement disorder of the face characterized by twitching, tonic spasms, and synkinesis of the muscles innovated by the facial nerves. Although a structural lesion (tumor or AV malformation) at the origin at the facial nerve from the brain stem may cause hemi-facial spasms. However, in most cases, no definite structural lesion can be isolated.

A limb dystonia is defined as a dystonic movement effecting the arm, hand, foot or leg. Writer's cramp is the most common limb dystonia and can vary from thumb extension upon writing, to pronation of the hand when writing, to flexion of the wrist. It is interesting to note that writer's cramp occurs only with writing.

Idiopathic spasmodic dysphonia and laryngeal dystonia are clinical terms used to describe an action induced laryngeal movement disorder upon speaking. Two distinct types of laryngeal dystonia have been described.

Adductor dystonia is due to irregular hyperadduction of the vocal cords. The patient exhibits a choke, strangled-strained voice quality with abrupt initiation and termination of speech resulting in short breaks in phonation. Abductor dysphonia is due to intermittent abduction of the vocal cords. Patients with abductor

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dystonia exhibit a breathy, effortful voice quality with abrupt termination of voicing resulting in aphonic whispered segments of speech.

Cervical dystonia (spasmodic torticollis) is a focal dystonia effecting the neck muscles that cause repetitive clonic head movements or tonic abnormal postures of the head as a result of twisting (torticollis), tilting toward the shoulder (laterocollis), flexing (anterocollis), or extending (retrocollis) the neck. Torticollis is the most common form of dystonic head deviation but the majority of patients with cervical dystonias have a combination of these abnormal postures. Spontaneous remissions may occur in up to 20% of patients. The remissions are usually transient and nearly all patients eventually relapse. Surgical therapy, such as selective peripheral denervation may offer relief to carefully selected patients but the results are variable and most patients eventually relapse.[4]

Since it's introduction into clinical use in the early 1980's, Botox has been demonstrated to provide an effective and safe therapy for focal and segmental dystonias. Botox injections have several advantages over surgical therapy in the management of intractable diseases. The patient is awake and there is no risk of anesthesia. Graded degrees of weakening can be achieved by varying the dose injected.

Botox is approved by the FDA and labeled for "The treatment of strabismus and blepharospasm associated with dystonia, including benign essential blepharospasm or VII Nerve disorders in patients twelve years of age and above". The American Academy of Ophthalmology, the American Academy of Neurology, the American Academy of Otolaryngology, and the National Institutes of Health have released consensus statements confirming the therapeutic efficacy and safety of Botox in a variety of clinical conditions.

The bacteria of Clostridium botulinum produces seven serologically distinct toxins that are potent neuroparalytic agents. These are designated as; A, B, C, D, E, F, and G. The toxins are synthesized as a single chain of polypeptides with a molecular mass of approximately 150,000. The result is a heavy chain linked by disulfide bond to a light chain. It is in this form that the molecule paralyzes the neuromuscular transmission. Botox exerts it's neuromuscuiar effect at the neuromuscular junction by inhibiting the release of acetylcholine, causing paralysis. It specifically inhibits the release of presynaptic acetylcholine. Cultures of *Clostridium botulinum* are established in a fermenter, grown and then harvested by centrifugation after acidification.

The precipitated crude toxin is solubilized and purified. The solution is monitored for concentration, potency, and protein content. Vials of the precipitated toxin are shipped via dry ice from California by the drug company, Allergan. The toxin is reconstituted by using 1 cc of nonpreserved normal saline. Once in solution, the toxin is viable for only 4-6 hours.

Numerous studies and trials have been done to prove the efficacy of botulinum toxin. Jankovic and colleagues published a study in 1989 entitled *Botulinum Toxin Injections for Cervical Dystonia*. 205 patients with cervical dystonias were studied for three months up to four years. 1074 injections were performed. 145 of the 205 patients (71 %) improved substantially after one or more visits. Of the 89 patients who reported pain, 69 (76%) had almost complete relief of pain. While most patients improved within the first week after injections, some had a latency of up to 8.5 weeks. Duration of maximum benefit lasted up to 12.5 months in some but the average was 11.2 weeks. 58 of 205 (28%) of patients had complications of mild dysphagia or neck weakness. It was concluded that botulinum toxin is a safe and effective therapy for most patients with cervical dystonias.[1]

In 1989 the American Academy of Ophthalmology gave a consensus statement concerning botulinum toxin for eye disorders. Specifically, essential blepharospasm and strabismus were reviewed. Their summary of statement was "Botulinum toxin injections have been used for 11 years by 292 ophthalmologists in 854 patients aged 3 months to 9 years.

"No systemic toxin reaction has occurred, local complications are few, and visual loss has not occurred in any case. In blepharospasm and hemi-facial spasm, Botox appears to fill an important need, since no other drug is reliable, effective, and since surgical interventions have substantial side effects."

Contraindications to Botox injection include; myasthenia gravis, motor neuron disease such as ALS and Eaton Lambert syndrome. Side effects in the past 17 years after injection have included a flu like syndrome, acute glaucoma, brachial plexopathies, and polyradiculopathy. Patients who failed to respond may be due to improper choice of sites, improper dose, developing antibodies to the toxin, or a disorder that will not respond to botulinum toxin.

In summary, botulinum toxin appears to be quite safe and effective for a variety of movement disorders including blepharospasm, hemi-facial spasm, limb dystonia, cervical dystonia, laryngeal dystonia, and refractory cases of spasticity and rigidity. Medications such as anti-cholinergents, Tegretol, dopamine agonists and antagonists, Klonopin, and Baclofen have been tried in treating patients with the above movement disorders. Unfortunately medication is effective in 20-40% and is usually short lived.

Larry W. Epperson, M.D.
President, Alabama Academy of Neurology

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Usha Bhuta
A-MASA President

A Success Story... WAMASA To AMASA 1971-81

A British writer once wrote, "A doctor's wife should be like a cigarette, always ready to soothe ; like an ashtray, always ready at hand ; sympathetic, with a keen ear for the telephone, discreet, and one who loves to be bounced out of sleep at night and left cold on one side. The ideal wife of a doctor could not last very long, she would die of internal combustion." This picture of a doctor's wife changed drastically in 70's and 80's when women's lib movement spread all over the country. Women took assertiveness training and took stands on political, legal and health issues. Medical field expended with test tube babies, surrogate mothers, cat scans and hospice. The microwaves and food processors were invented (I am sure inventors had doctors' spouses in mind). Women started to move fast as they learned the steps of disco. Woman's auxiliary changed its name to auxiliary as the first male member joined the organization in 1974.

The legislative issues needed our attention at the national level. In 1973 the State Auxiliary had a "day in the legislature". Auxiliary members through out the state came to meet with local and state representatives. The prayer breakfast was held at the Downtowner Motor Inn in Montgomery. The guest of honor Governor Fob James and Senator Dewey White were introduced by House Speaker Joe McCorquodale who presided at the breakfast meeting. After the breakfast Auxilians went to the Capitol to observe government in action. The legislators were presented the gift packages of baked goods by Auxiliary members. The 200 plus Auxilians who attended, later thanked the county medical societies for their contribution and support for this worth while cause. This venture paid its devidends when the Comprehensive Health Education law passed. The Auxiliaries in the Alabama counties displayed the billboards and bumper stickers saying "What in the health do our schools teach?". The State Medical Auxiliary also sponsored Comprehensive Health Conference around the State.

In 1978 MASA roster started to print the names of the State Auxiliary members. In 1980 the first Auxiliary Guide was printed which took place of the handbook.

Our leadership excelled when Ruth Johnson from Jefferson county was elected National President in 1979 and Pat Scofield from Jefferson County became the National Health Chairman in 1979 and again in 1981, Pat introduced the "Shape Up for Life" program. The Auxilians painted hopscotch diagrams on school playgrounds to encourage immunization programs.

AMASA in those days didn't just serve the communities in health related services but realized the problem physicians were facing. The Medical Association had co-operation from the Auxiliary in its program of identification and rehabilitation of impaired physicians.

A lot of hard work was put up by the Auxiliary members but they did not lose their sense of humor. The following poem in one of the AMASA News in 1981 is the prime example:

"IF" FOR A DOCTOR'S WIFE

(With apologies to Rudyard Kipling)

If you can keep your head when
patients all about you
Are losing theirs, insisting that the
doctor call;
If you can trust your husband with
women all about him
And never feel a jealous twinge
at all;
If you can learn that people are
demanding,
And care nothing for a doctor's
private life,
Yet, under tension, still be
understanding
And try to be a model, patient
wife;

If you can hear a group discuss
a diagnosis
About which you know facts on
which they err,
And never breathe a word, nor
mention a prognosis,
Although, to do so, would cause
quite a stir;
If you can plan a dinner party
And find you're left alone to
entertain,
And never show your inner thoughts
or disappointment
And not be tempted to complain;

If you can play the role of Dad
as well as mother,
Explaining to the youngsters why
this has to be;
And also doctor Dad, yourself and
all the children
(For doctors' families hate to bother
an M.D.);
If you can cook a meal at noon
or midnight
And serve it fast, and with a
pleasant smile,
And, as you eat, hear many cures
and symptoms
With the telephone ringing madly
all the while;

If you can dress in style and not
be ostentatious,
Remembering that the public
watches every move you make;
And, when you're tempted to be
rude, be gracious,
And often laugh, although your
heart would break;
If you can feel you chose this
man to marry
And be a loving, cheerful,
understanding wife—
You'll find your burdens pleasant
ones to carry,
And, what is more you'll lead a
full and happy life!

—Mrs. Iterbert J.(Helen) Ulrich
Auxiliary to the Medical Society
of the State of New York

Editor's Note: In 1981, we are aware of our male members.

INFORMATION FOR AUTHORS CONCERNING MANUSCRIPTS

Manuscripts from member physicians should be typewritten, double spaced on white paper 1-1/2 x 11 inches with adequate margins. Two copies should be submitted. Authority for approval of all contributions rests with the Editor. *Alabama Medicine* reserves the right to edit any material submitted. The publishers accept no responsibility for opinions expressed by contributors.

Style: The first page should list title (please be brief), the author (or authors), degrees, and any institutional or other credits. Bibliographies must contain, in the order given: Name of author, title of article, name of periodicals with volume, page, month – day of month if weekly – and year. Number should be limited to absolute minimum. References should be numbered consecutively in order in which they appear in the text.

The Stylebook/Editorial Manual, published by the AMA, is the general reference for questions of style. It is particularly useful in the proper presentation of data. When conflicts occur between usage, etc., by an author and the stylebook, these will be resolved in favor of the author if his method is persuasive and logical.

Helpful to many writers is *The Elements of Style* by William Strunk, Jr., and E.B. White, which emphasizes brevity, vigor and clarity.

Final authority on grammar is Webster's *New International,* Unabridged, Second Edition.

Length of Articles: Articles should not exceed 3,000 words (approximately 3-4 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

Illustrations: Illustrations should be numbered consecutively and indicated in the text. The number, indication of the top, and the author's name should be attached to the back of each illustration. Legend should be typed, numbered, and attached to each illustration. Photographs should be clear and distinct; drawings should be made in black ink on white paper. For photographs, glossy prints are preferred.

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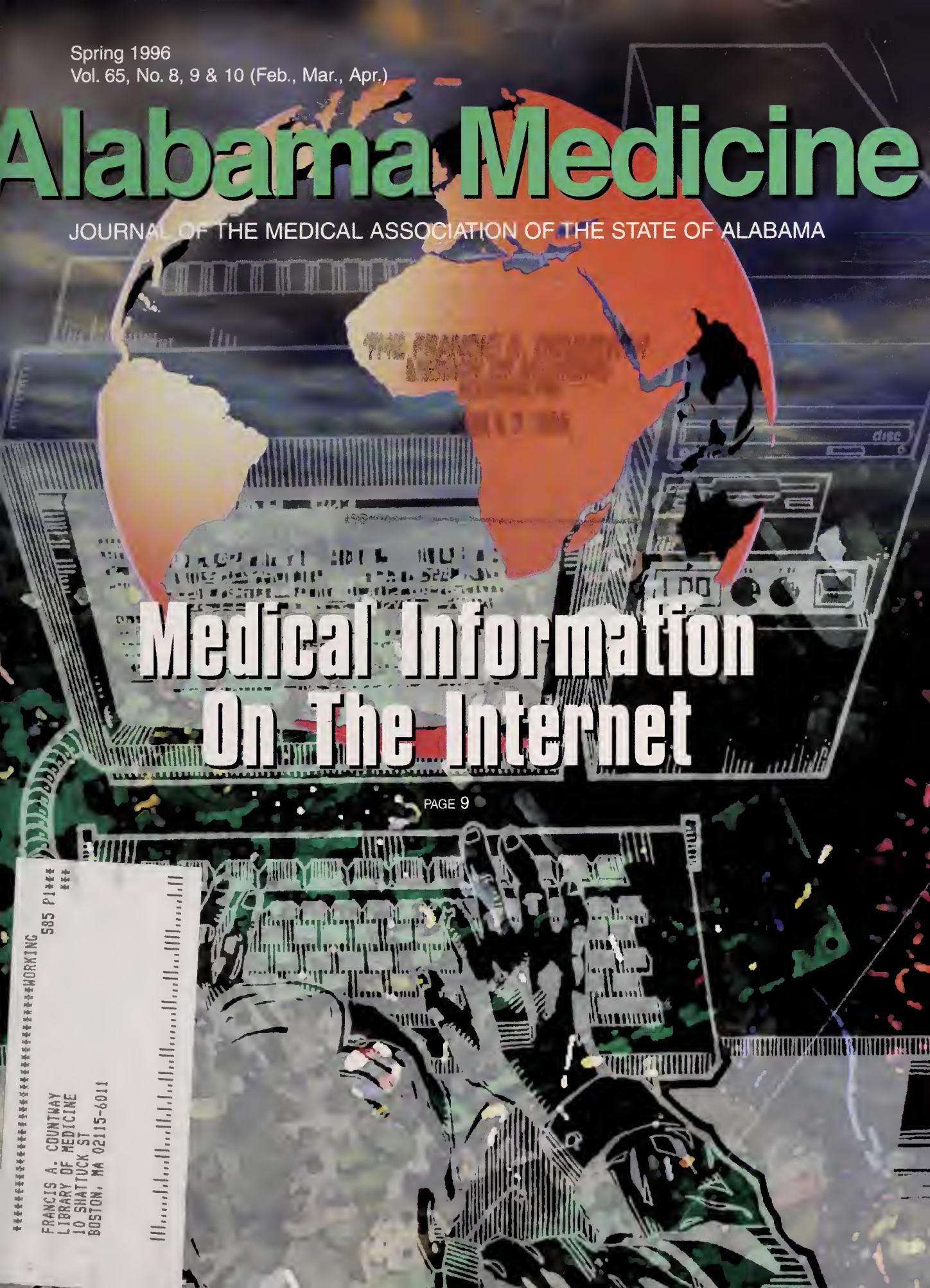

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EXECUTIVE DIRECTOR

S. Lon Conner
Executive Director, MASA

The Golden Mean

In periodic fits of masochism, I occasionally find myself reading something far over my head but still fascinating. As often as not I am pleasantly surprised by one small reference or allusion that does resonate somewhere in my own education or experience.

So it was while reading a profile of the eminent physicist turned biologist Albert Libchaber in *Scientific American* (March, page 36). People who bring passionate, total commitment to their life's work have always fascinated me – even when I don't have a clue as to what that work really involves.

Dr. Libchaber, I learned, finds inspiration in the lives of the great scientists of the past. He all but summons their spectral presence by surrounding his bedroom with original editions of the works of Newton, Descartes, Leibnitz, Galileo, Poincare. He finds inspiration, for example, in re-reading Kepler's 1611 musings on a snowflake: a "nothing" that reveals in its symmetry the atomic structure of matter.

Having grown weary of both France and his investigations into condensed matter, Libchaber moved to this country a dozen years ago. America enticed him, he says, because: "It's an adolescent country. Has vitality. Makes no plans, makes mistakes, can recover from anything. France is middle aged."

First at the University of Chicago ("Chicago is an unstable fixed point"), he moved to biology at Princeton and the NEC Institute in 1991, thence to Rockefeller. (Of New York he says, "It's ugly, dirty, bankrupt. But it's alive. In New York, everything is possible.")

In any case, Dr. Libchaber is considered very important to the burgeoning field of chaos theory, in all disciplines, because of his elegant experiments with "superfluid helium" (whatever that is) and his demonstration of the "period doubling cascade." Before he did his experiments, in France and later in this country, chaos theory had been a plaything of mathematicians. After his work, notably in Chicago (pronounced by a colleague to be "so beautiful that it killed the field") it became obvous to physicists that what had been regarded as completely disordered systems now appeared precise and orderly. Dr. Libchaber had shown "subharmonics of a fundamental wave" appearing in what had been seen as simply unfathomable confusion, as I understand it.

Actually, he had to modify his earlier findings about "period-doubling" because the Chicago work showed other wavelengths related to each other not by doubling but by a factor of 1.618. Look at that number again; you have seen it before, although probably not since high school. *Scientific American's* writer called it "The Golden Mean." Actually, it is the Golden Ratio or Golden Section, although closely associated with the Golden Mean in studies of classical Greek thought.

The encyclopedia definition of the Golden Section may recall some unpleasant memories of quadratic equations back in high school algebra: "When a line AB is sectioned at point C in such a way that AC/AB = CB/AC, the section represents extreme and mean ratio. This ratio has the numerical value of 0.618 [actually 0.6180339...]."

If you care to inflict even more remembered pain, you can prove it yourself by the quadratic formula, $X = (-1+\sqrt{5})/2 = 0.6180339....$

The Pythagoreans are said to have used the properties of the Golden Section in discovering irrational numbers, but what sticks in the mind was that this ratio is the formula for perfect harmony. Renaissance artists revived the ratio as the "devine proportion." Paintings enclosed in a frame so constructed

were thought to have been imparted a special beauty by the absolute harmony of theenclosed space. Even within the painting, or in the dimensions of sculpture, objects were sometimes arranged according to the .6180 rectangle.

Since antiquity, many philosophers, artists and mathematicians have been in trigued by the Golden Section, seeing in it a graphical application of that other Greek idea of the Golden Mean – the middle way between extremes of thought and action; the way of compromise and conflict resolution.

In the Renaissance, the Golden Section and the Golden Mean become one in the minds of many, since both were searches for harmony.

We enlightened folks on the cusp of a new millenium reject such notions as primitive, of course. In fact, we seem to have lost all striving for harmony. Conflict is our meat; preferably conflict that offers no hope of compromise.

This can be seen in the polarization of viewpoints on many national issues, wherein the energized advocates at both extremes suppress any notion of compromise with the opposing view as treason to the cause. And it will certainly be seen in this year's political races, with each side depicting the other as barbaric ogres fit only for the gallows.

Closer home, the ancient profession of medicine is now undergoing total immersion in what, at times, seems chaos. And few seem remotely interested in searching for subharmonic waves beneath the convulsions over managed care, practice guidelines, gag rules, and dozens of other points of collision between opposing forces.

I suspect there is a Golden Section here somewhere, as well as a Golden Mean. I also believe that it will be found, in time.

I do not, however, have the same hopes for the political scene, which has returned to a state of nature. Confrontation, stonewalling, hate mongering, egregious slander, scandal – these have become the instruments of democratic choice in a country that has prided itself as the last and best refinement of Judeo-Christian Western Civilization, a country which owes so much to those early Greek ideas of proportion and moderation.

PRESIDENT'S PAGE

C. Neal Canup, M.D.
President, MASA

Thanks For New Worlds

It has been a distinct honor for me to serve as President of the Medical Association of the State of Alabama this past year. There are so many of you to whom I owe many thanks. The Board of Censors and the Chairman, Dr. Lightfoot, have been very supportive and helpful. Dr. Arthur Toole, the Vice-President this year, has been very supportive and has contributed significantly to the work of the Association. Mr. Lon Conner continues to contribute way beyond the call to the work of this Association. Many thanks are due to him and his staff.

This year has given me the opportunity to talk about the issues that I think are important. We have talked about the profession, what it is and what threatens it. We have talked about the failure of the legal system, a system that doesn't need reform, but needs transformation. We have talked about the difficulty in knowing who is telling the truth in this society. Being your President gives one the opportunity to be involved in many areas that affect the way we practice. Dealing with the many problems and the routine functions of the Association, the Health Department, and the Board of Medical Examiners stimulates one to reflect and give some relative value to the problems and functions of this association. It seems that for the past few years Health Care Reform, or "Planned Care," along with the legal issues of malpractice, insurance rates, and tort reform, and the need to be a competent administrator has consumed much of our time, energy and resources. My sense is that while these issues are important and deserve some of our time and energy, they are not **what got us here**.

Do you remember as a youngster, or as a student, when you were being led toward medicine? You would learn a new physiologic principle, or a new chemical formula, reading about the study of yellow fever and the epidemiology of TB, you would get excited and wonder if someday you might be involved in intervening in the disease of man in that way. All of us know that in this profession we have one of the best opportunities to have a good life. A good life in the sense that we make a good living, that by being involved with our patients, we experience those rare moments of joy. Our cup is filled on a daily basis. Our patients still believe in us at a 93% level. That is much higher than any of the other professions. So, **what got us here** is our willingness to hold to the ideals that led us into medicine, but most important our willingness to intervene in a quality and caring way in the illness and lives of our patients.

Finally, a personal note. On the water tank of my commode are two miniature books given to us by friends. One is entitled, "Friendship, a Bouquet of Quotes." One of the quotes by Anis Nin, a French-born American writer, makes the statement: Each friend represents a world in us, a world possibly not born until they arrive, and it is only by this meeting that a new world is born. Thank you for many new worlds opened to me this past year.

The Future of A State Medical Journal

"Brevity in writing is the best insurance for its perusal." –Virchow

Twenty years ago when I graduated from medical school, every commencement speaker predicted sweeping change for the medical profession. Viewed from the perspective of those years, the predictions seem almost naive. Molecular and genetic research and microcomputerized high-technology have exploded the information and skills available at the time of my introduction to medicine. Escalating costs, proliferating systems for controlling those costs, intrusion into physician-patient decisions, and a legal system out of touch with reality form a dark side, a second revolution that seems indifferent to the amazing benefits of the first.

All of this is to say that it comes as no surprise to physicians that change of any sort is in the air. Well, not even your state medical journal is exempt. As the scientific revolution swept the profession, research and clinical information shifted from state journals to national ones, reaching broader audiences and drawing on the greater resources needed to referee complex articles. As the second, dark revolution gained momentum, advertising sought the larger audiences and quick returns on investment. Neither trend favors state journals in their traditional roles.

As a result, state journals have changed some, with more emphasis on the affairs of organized medicine, more reports on the structure and management of health care, and less emphasis on "scientific" articles. Paid advertising, though, continues to dwindle across the country, and red ink flows freely from the journals.

The experience in Alabama has been fairly typical. Last fall, at the direction of the Board of Censors, I convened a group of physicians and others familiar with the journal *Alabama Medicine*. As a result of those conversations and through the Board's strategic planning process, several decisions have been made.

The first, already implemented, was to change *Alabama Medicine* from a monthly to a quarterly. This was in part a financial decision, but it also allows for a larger journal with diverse content.

The second change is to leave the editing and publishing of scientific articles to those who do it best – the national refereed publications. We plan to find articles on managed care, practice management, legal issues, ethics, education, public policy, and of course, association affairs. To a degree, we have moved toward such a format.

Thirdly, the journal, like all MASA's publications, should be connected to all other means of communication with our membership, which will include electronic as well as print media. This is a work in progress, but it has been good progress.

Finally, and most recently, the Board has approved a significant change in format for the journal. Beginning with the Summer issue, we will begin to condense articles from a variety of sources, but especially those which are not commonly a part of your journal stack or mine. I practice internal medicine, and it is all I can do to get a fair view of what is in my specialty journals every month. I simply do not have time or energy to scan any of the dozens of other publications that might have articles of interest to me, articles in the categories MASA hopes to cover in the new journal.

So we hope to do that screening for you, condense the article to make it conform to Dr. Virchow's mandate of brevity, and combine it with enough similar ones to make the new journal worth your time and attention. Reflecting such a significant change in purpose and format, the Board has approved a name change: *Alabama Medical Digest*. While we will emphasize the digest format, original articles still will be welcome.

There will be rough spots, and maybe big gaps. As far as we can tell, this is not something that any other state journal has done. Nevertheless, we are convinced that these changes make sense for our journal, in our state, at this time. We welcome your comments, as well as your suggestions and your help. The result, once you help us to refine it, should be a new and useful addition to your reading shelf or coat pocket.

This has not been brief, and it may have violated Dr. Virchow's rule of conciseness. I know many of you, though, and I know how seriously you take the practice of medicine. As a result, you also take your reading seriously – even when the most serious thing about it is how little time you have to do it. That is why I wanted to explain what we are doing with your journal, why we are doing it, and how we hope it will help you. 2400 or so years ago, Hippocrates said, "An important phase of medicine is the ability to appraise the literature correctly." Imagine what he would say now.

William A. Curry, M.D., Editor

Radiation Oncology at the Centennial

*Robert Y. Kim, M.D.**

1995 marks the centennial year of the discovery of x-rays. The medical profession advanced rapidly following Roentgen's discovery of the x-ray. Every aspect of medicine came to rely on radiology in some way. The x-ray not only revolutionized diagnostic medicine, it transformed therapeutic medicine as well. Only months after its discovery, the x-ray was being used with therapeutic intent, thus began radiation therapy. We can examine the development of radiation oncology in several periods.

Wilhelm Conrad Roentgen

BEGINNING (1895-1910)

It was 100 years ago, on November 8, 1895, that Wilhelm Conrad Roentgen (Fig. 1) made a startling discovery in his laboratory in Wurzburg, Germany. A 50-year-old professor of physics was experimenting with the action of electric energy in partially evacuated glass tubes (Crooke's tube), a popular scientific activity in the last quarter of the 19th century. In the corner of the room, he noted a faint glow from a piece of paper painted with barium platinocyanide and discovered x-ray. At that time, Roentgen might have been looking for the "invisible high-frequency rays" that Hermann Ludwig Ferdinand von Helmholtz had predicted from the Maxwell theory of electromagnetic radiation. Although other physicists had unknowingly encountered the x-ray years earlier, Roentgen was the first to recognize the significance of the new ray. On January 23, 1896, he presented this finding on "a new kind of ray" ("eine neue Arte von Strahlen") to the Physico-Medical Society of Wurzburg, using as evidence the now famous radiograph of his wife's hand.[1] Within a few days, journals and newspapers around the world were spreading the amazing story of the new rays. He was granted the first Nobel prize in physics in 1901.

With the new rays, Emil H. Gubbe, lamp manufacturer, immediately started to work to make the tubes and produce x-rays. Within weeks, he had developed dermatitis on his hand. Gubbe was studying medicine at that time and employed x-ray to treat carcinoma of the breast on Jan. 29, 1896.[2] Although there is some dispute over the accuracy of Grubbe's claims to be the father of radiation therapy, it is known that x-rays were being used for therapeutic purposes within a few weeks after the public announcement of Roentgen's discovery.

Professor, Department of Radiation Oncology, University Hospital, UAB, Birmingham

X-rays were used for almost every disease including the treatment of many non-malignant conditions such as thyrotoxicosis, skin tuberculosis, arthritis, rheumatism, lupus, warts, and acne. By 1902, Heber Robarts, founder of the American Roentgen Ray Society, announced that there were about 100 identified diseases that respond favorably to x-ray treatment [3]. Initially, the same x-ray tubes were used for diagnosis and therapy. The generators and the Crookes tubes were capable of producing x-rays of relatively low energy, ranging only 80-140 kilovolts (KeV). This low voltages produce x-ray beams of poor penetrating power.

As a result, physicians also began using radiation of a different form, encapsulated radium, to treat cancer. Within weeks, Roentgen's discovery motivated Antoine H. Becquerel to investigate the fluorescence produced by uranium, leading Marie & Pierre Curie to their own discovery of natural radioactivity. Marie Curie's 1898 discovery of radium gave rise to "curie therapy," the precursor of modern brachytherapy. Curie's discovery failed to have an immediate impact, which is not surprising because of the considerable work necessary to extract even a small amount of radium from the masses of pitchblende ($120,000 per gram in 1903).

The discovery of rich ore deposits in the Belgian Congo resulted in the development of teletherapy units called "radium bombs." Until higher energies became available, however, interstitial and intracavitary radium therepy was more common than superficial external beam therapy. At that time, there was no knowledge of radiation biology and dosage concept. Therefore, they had to depend on the degree of erythematous skin changes as a clinical dose, the so called erythematous dose. There was almost complete absence of radiation protection for both patients

Office-based therapy in 1910. Simultaneous patient treatments in the same room without protective shielding wall.

and staff (Fig. 2). Often, the physicians would remain in the treatment room with the patients. Soon they realized that x-rays were associated with risks. In fact, many of the pioneering radiologists became victims of radiation injury and radiation-induced cancer. Ironically, Madame Curie died of an aplastic anemia due to her long exposure to ionizing radiations.

KILOVOLTAGE ERA (1910-1940)

That situation changed with the 1913 introduction of the Coolidge hot cathode tube. Invented by William Coolidge, a researcher at General Electric, the Coolidge tube ushered in a new era in diagnostic and therapeutic radiology. Its predecessor, the unpredictable Crookes tube, was gas-filled. By contrast, Coolidge's invention was a near-perfect vacuum tube that could tolerate higher voltage (200-250 KeV), and therefore, produce more penetrating x-rays.[4] The Coolidge tube quickly became standard equipment for orthovoltage radiation therapy. These machines were often referred to as "x-ray cannons" because of their appearance: patients were protected from leakage radiation by surrounding the tube with a cylindrical metal shield.

While U.S. researchers were investigating methods of generating even-higher voltages, a French discovery again changed the direction of radiation therapy. In 1933, Frederick Joliot and his wife Irene Curie, the daughter of Marie and Pierre Curie, discovered artificial radioactivity by bombarding aluminum with alpha particles from a radioactive source. Within a year of this discovery, researchers found an additional 100 radioactive isotopes. Irene also received the Nobel prize in physics like her mother. The development of Lawrence's cyclotron made possible the manufacture of radioisotopes in great quantities. This opened the door for nuclear medicine and brachytherapy in radiation therapy.

Conventional multi-fraction radiotherapy was based on experiments performed in Paris in the 1920s and 1930s. Claude Regaud[5] found that Ram testes could not be sterilized with a single dose of x-rays without extensive skin damage, whereas if the radiation were delivered in daily fractions over a period of time, sterilization was possible without skin damage, ushering in the beginning of fractionated radiation therapy. Clinical observations by Regaud and Coutard[6] also confirmed the effectiveness of fractionation in head and neck cancer.

This progress was hampered by difficulties in reproducing the technique of treatment. There was still no satisfactory method of measuring the dose given. During this decade, Ionization chambers were made and the roentgen or NR" was defined as a unit of measurement for x-rays and gamma rays at the Second International Congress of Radiology in Stockholm in 1928. In 1953, the International Commission on Radiological units (ICRU) recommended the rad as the unit of radiation absorbed dose. The rad was more recently replaced by the centigray (cGy) in 1974. By the end of the 1920s, truly curative radiotherapy for cancer had become a reality. However, the major difficulty at that time continued to be the inability to deliver high enough doses to deep-seated tumors without causing severe damage to superficial tissues, even with the use of multiple fields and fractionation.

MEGAVOLTAGE ERA (1940-1960)

The development of modern megavoltage beam radiotherapy, however, was made possible by the introduction of the cobalt-60 unit and the linear accelerator. Initially, physicists in Boston, led by John Trump, were developed the first Van de Graaff generator for radiotherapy. This was installed at the Huntington Hospital in 1937.[7] Within two years, a second Van de Graaff generator was built by MIT, operating at 1.25 million volts (MeV). Further technical development was impeded by the Second World War, but ironically some of the technology developed for destruction was eventually utilized for more peaceful purposes.

The immediate post-war years saw great advances in medical engineering leading to the production of new, more powerful machines. Occurring almost simultaneously was the development of the betatron and cyclotron, the powerful new particle accelerators capable of generating up to 20 MeV. The betatron, a circular electron accelerator, was developed in the early 1940s by Dr. Donald Kerst of the University of Illinois. It generated energy by using an electromagnet to spin electrons through a circular glass tube until they almost reached the speed of light.

The cyclotron, based on a similar principle, accelerated a proton rather than electrons and generated neutron rays rather than x-rays. It was designed in the early 1930s by Dr. Ernest Lawrence, a physicist at the University of California at Berkeley. During World War II, nuclear power was harnessed as a destructive force. Afterward nuclear reactors were employed to produce radioisotopes for medical use. Isotopes produced by nuclear reactors were available in large quantities and at a lower cost than those produced by cyclotrons.

Radioisotopes such as cobalt-60 were used for external beam radiotherapy as source of gamma rays which are identical to x-rays except in their origin. However, the size of cobalt source resulted in a larger penumbra than other linear accelerators. The first cobalt-60 unit was installed in early 1951 at the Saskatoon Cancer Clinic in Canada. That Spring, the Oak Ridge institute began building a 1,000 curie cobalt-60 source for M.D. Anderson Hospital in Texas.[8] Cobalt-60 and Cesium-137 were the most popular sources of supervoltage external beam radiation during the 1950s and 60s. Within a few years, however, cobalt units fell out of a favor in radiation therapy because of continual improvements in the linear accelerator.

Although some early work with the linear accelerator was done in England,[9] the modern linear accelerator, "linac," was invented by William Hansen at Stanford University in the mid-1940s.[10] It was based on research conducted by Russell and Sigurd Varian,

Linear accelerator on the cover of Life magazine in 1958.

the brothers who later founded Varian Associates of Palo Alto, California. Their creation, called a Klystron tube, later became a major component of the linear accelerator. Using microwave technology originally developed for radar systems during World War II, they constructed a linear accelerator. It was the British, however, who succeeded in building the first therapy linac, an 8 MeV stationary machine, built by Metropolitan Vickers and installed at the Hammersmith Hospital, London in 1953[11] and at Stanford University in California in 1956. It is now in the Smithsonian Institute in Washington, D.C. The linac became a "work-horse" in radiation therapy departments. By the end of the 1970s, most radiotherapy facilities had obtained at least one linac and many supplemented with a second at higher energy, typically 8-20 MeV. The linac's beam can penetrate to a greater depth than that of earlier orthovoltage systems and cobalt-60 units, facilitating to delivery of tumorcital doses to cancer deep within the body. This was the beginning of modern radiotherapy (Fig. 3).

ERA OF REFINEMENT (1960-PRESENT)

This period is responsible for the refinement of delivery systems in radiation therapy and the inception of radiation oncology.

In 1957, the American Medical Association first recognized radiation therapy for special training. In 1958, the American Club of Therapeutic Radiology first met in Chicago at the Radiology Society of North America (RSNA) meeting which became the American Society of Therapeutic Radiology (ASTRO) in 1966 with only 250 members. Now, we have over 3000 active members in 1995. In 1968, the Radiation Therapy Oncology Group (RTOG) was formed for clinical research. Now, 250 RTOG member institutions are active in the United States including seven institutions in Alabama. The results of cooperative randomized trials from RTOG were the most determinant clinical practice in the USA. The immediate future for radiation oncology depends on the results of new innovative randomized trials.

Technically, the development of simulators, immobilization techniques, and customized shielding allows delivery of a radiation dose to the target volume accurately and reproducibly with minimal damage to surrounding normal tissues. Also with the development of CT scans in the early-1970's and MRI in the mid-1970's, radiation oncologists were able to visualize, for the first time, accurate cross-sectional anatomical information for treatment planning. The availability of less expensive and faster computers is contributing to wider availability of radiation therapy planning for three-dimensional (3-D) conformal radiotherapy. Although largefield 3-D conformal therapy is confined to selected institutions at this time, one form of such treatment for small brain lesions, stereotactic radiosurgery, has already become common place. With the development of multi-leaf collimators, dynamic conformal 3-D radiotherapy is also in reality.

Biologically, a new paradigm of the linear-quadratic concept recognized the difference in radiation effects between acute and late reacting tissues. Hyperfraction utilizes more than one treatment per day with smaller does per fraction to increase the tolerance of late reacting tissues, and to deliver a higher tumor dose. Routine use of hyperfractionation radiotherapy awaits clinical confirmation[12]. During the past ten years, technologically advanced accelerators, coupled with the implementation of exciting new fractionation schemes and the development of sophisticated treatment planning systems have led us into a new era of high-tech radiotherapy. Since the discovery of x-rays and radium, there has been a tremendous improvement in the field of radiation oncology. The success of the past 100 years has been based on creative minds and hard work of many clinicians and scientists. Today, radiation therapy is the cornerstone of cancer management programs throughout the world. Nearly 60% of U.S. cancer patients are treated with some form of radiation therapy for palliation and to prolong life. Will the next 100 years be as exciting and productive? We just passed November 8, 1995, with lists of exciting promise such as research in the molecular basis for radiation resistance and sensitivity, radiation repair genes, immunoradiotherapy, and innovative multi-modality approaches. The hope for a magical breakthrough that will solve the cancer problem is always present. All that is needed is the creativity of future generations of scientists and clinicians.

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Medical Information on the Internet

*Judy Burnham, MLS**

Connecting to the Internet allows health care professionals to access medical information at computer sites worldwide, to search databases, communicate with peers, obtain continuing education, retrieve images and software, obtain drug information and access statistical data. Users can access sites with "virtual patients," search library catalogs, locate jobs and post resumes, and explore conference sites and topics. Rural health care professionals can have access to medical information equivalent to their urban peers. Information is usually available over the Internet much more rapidly than through traditional print methods.

History

The Internet is a network of networks of computers that connects computer sites worldwide and allows transfer of information through various tools. The Internet began in 1969 as ARPANET, a network of the Department of Defense as a communication mechanism. When begun, ARPANET included only four sites, but by 1972, there were 50 universities and government facilities connected. The number of sites had grown to 73 by 1975[1], and by May of 1982, that number had increased to 235 sites. In 1986, the National Science Foundation began NSFNET in order to link major universities and research centers, with connections to 2308 sites included. By the end of 1989, more than 150,000 hosts provided Internet access for more than 2 million users[2], and 25% of the networks were outside of the U.S by 1990[3]. In addition to universites and governmental agencies, the Internet now includes commercial sites.

Development of the World Wide Web (WWW), which did not exist five years ago, has increased the ease of use of the Internet. Development within the last two years of software to access this tool has increased usage of the Internet even more. Various data reported in 1995 indicated more that 30,000 networks with more than 23 million users[4]. McEnery[5] estimates 2.3 million computers in 130 countries connecting 30 million users with a growth rate as high as 2 million additional users per month. Mann[6] reported more than 5 million hosts in 94 countries with a 9-12% growth rate.

Glowniak reported in January 1995 that there were approximate 13,000 WWW sites that allowed public access[7]. The number of Web sites doubles every four months. Over 1000 new computers are connected to the Internet each day, and it is estimated that over 70 million computers will be connected by 2000. Over 20 million e-mail messages are sent weekly. The amount of data transmitted is increasing by 14% each month. It is estimated that over 16 million Americans will be connected to the Internet before the end of 1996[6].

University of South Alabama, Biomedical Library. Article prepared in behalf of the Alabama Health Libraries Association.

Access venues

Three things are needed in order to access the Internet: (1) an access provider that will furnish the necessary physical link; (2) communications software necessary for the connection; and (3) an applications program for accessing resources on remote computers.[7] p.124. Access can be either through a direct connection (available at universities, etc.) or through a dial-in connection using a modem.

Many health care professionals will have access through a university or hospital affiliation.

Also, some communities offer access via a FreeNet System. For others, commercial venues are available. See Figure 1 for Internet access venues. Before choosing an access provider, a user should ask:

* what services are provided? (E-mail, WWW, etc.)
* what type of connection? (WWW access not available with all connections)
* what type of interface will be used? (menu, graphic, etc.)
* what modem speeds are supported?
* will access be via a local call, 800# or long distance call? Is there a surcharge for 800# access?
* will software be provided?
* what is the pricing structure? restrictions on searching times? charges for additional time?
* what kind of support is available?

Internet Tools

Electronic Mail (E-Mail)

E-mail can be used to communicate between users at different sites, allowing the user to send and receive mail via the computer. It is the most used Internet tool, with an estimation that 85% of the Internet users utilize e-mail[1] and that 92% Internet users utilize e-mail at least once a week[8]. Mail sent electronically can reach the recipient within a matter of minutes, and eliminate the problem of telephone tag. Committee meetings can be conducted via the e-mail. Many e-mail systems allow the user to save important messages to a folder for future reference. Each individual has a unique e-mail address that specifies his name, location and domain. A country name may also be included. The email address is similar to a street address. For example with the e-mail address of:

jburnham@jaguar1.usouthal.edu

'jburnham' is the user's name, 'jaguar1' is the network system, 'usouthal' is the institution (University of South Alabama) and 'edu' (education) is the domain.

For the address:

Selected Internet Access Providers
for Alabama Health Care Professionals

AIRnet
(Athens, Decatur, Florence. Huntsville, Madison, Scottsboro)
(800)247-6388

America Online
(800)827-6364

Community Internet Connect, Inc.
(205)722-0199

CompuServe
(800)823-6505

Concentric Research Corp.
(Mobile)
(517)895-0500

Delphi
(800)695-4005

Global Connect
(Birmingham)
(800)229-4484

Gulf Coast Internet
Pensacola, FL (904)438-5700

HiWAAY Information Services
(Decatur,Florence,Huntsville)
(205)533-3131

interQuest Online Services
(Huntsville)
(205)464-8280

Matrix
(Birmingham)
(205)251-9347

Mindspring
(Birmingham,Auburn,Montgomery)
(800)719-4332

Mobile Area FreeNet
(Mobile)
(334)405-4600

NetCom
(Birmingham, Huntsville)
(800)353-6600

Prodigy
(800)PRODIGY

PSI net
(Birmingham, Huntsville, Mobile)
(800)821psi82

Renaissance Internet Service
(Huntsville)
(205)535-2102

Scott Network
(Birmingham)
(205)987-5889

Solinet
(800)999-8558

Southwind Technologies, Inc.
Biloxi, MS 39531

Traveller Information Services
(Birmingham,Huntsville)
(800)840-8638

Viper Net
(Birmingham,ViperNet)
(800)VIPER-96

Note: Most providers allow free search time for trial. Some also provide the necessary communication software.

Figure 1

president@whitehouse.gov

'president' is the user name, 'whitehouse' is the network system and 'gov' (government) is the domain. Other domains include 'org' (non-profit organization) 'mil' (military) and 'com' (commercial). The above e-mail address would be read as "president at whitehouse dot g-o-v". A country domain is also sometimes included, e.g., 'us' (United States) or 'ca' (Canada), especially if the address is out of the United States.

Discussion and Usenet Groups

Discussion groups, or listservs, allow individuals to communicate with peers in their discipline, or those with similar interests. Listservs are available in virtually every health care discipline and speciality, including family practice, radiology, pediatrics and anesthesiology. A list compiled by Lee Hancock at the University of Kansas includes over 400 medically related discussion groups[7, p.127]. Listservs allow the health care professional to discuss topics of patient care and clinical management with peers via the computer. Users subscribe to a listserve following a standard protocol. When a message is sent to the listserv, it is distributed to all subscribers. Any responses to the message that is sent to the listserv is likewise sent to all subscribers. Using discussion groups, peers can discuss controversial studies within hours of their release. Advice can be sought on treatment methods and administrative problems can be discussed.

Usenet groups are also available on a variety of topics. Unlike listservs, where postings are automatically distributed to everyone who has subscribed, with Usenet groups, the posting can be read only by accessing the Usenet site.

Telnet

Telnet allows a user to log onto a computer at a remote site. This allows the user to search databases and library catalogs at other institutions. Some insurance companies offer online claims submission via telnet.

Gopher

Gopher is a menu driven tool that can be used to access information at other computers. The gopher was developed at the University of Minnesota, and was named after their mascot, the Golden Gophers. The analogy is apt, however, as the gopher tool is used to move seamlessly from one site to another to locate the desired information. Over 100 medical centers and organizations have gophers[7 p 128]. Using gopher, information on grants can be obtained, electronic continuing education courses can be accessed, and position statements can be retrieved.

Gopher sites on a particular topic can be located using either Veronica or Jughead. Veronica searches the whole Internet gopherspace, while Jughead only searches a particular gopher site. Sites that are located are presented in a menu format.

File Transfer Protocol (FTP)

FTP can be used to download information that is resident on a remote computer, including software, images, and multimedia, as well as text. Although some FTP sites require a legal password, most sites can be utilized by non-affiliated users. The user simply logs on as "Anonymous," using a method of access called Anonymous FTP.

Available via FTP are documents on health care reform from the White House, documents on various medical conditions, and software programs for a variety of applications. FTP sites can be searched by subject using a search engine called Archie.

World Wide Web (WWW)

WWW was developed at CERN, the European Particle Physics Laboratory, in Switzerland. Unlike gopher, which is text based, WWW, with a proper viewer, provides access to text images, full-motion video, sound and all other media. The web documents, known as Web pages or Home Pages, includes hypertext links that can quickly take the user to another location. These hypertext links are highlighted or underlined on the web page and allow the user to jump from one site to another without needing to know the destination. WWW can include motion and sound. The address of the home page is called a URL (Uniform Resource Locator).

A special Internet connection and special software, called a web browser or viewer, such as Netscape, Cello or Mosaic, is needed to access the graphics of WWW. This software is available without charge via the Internet for educational purposes. Individuals without the necessary software to view the graphics can access WWW in text format using Lynx.

There are several search engines available for WWW, including WebCrawler, InfoSeek, and World Wide Web Worm. These search engines allow the user to search for web sites on particular topics. See Figure 2 for URLs for some Web search engines.

Figure 3 lists several important medical WWW sites.

Selected Web Search Engines

World Wide Web Worm
http://www.cs.colorado.edu/home/mcbryan/WWWW.html

WebCrawler
http://webcrawler.com

Galaxy
http://galaxy.einet.net/galaxy

Yahoo
http://www.yahoo.com

Figure 2

Drawbacks of the Internet

Security and confidentiality are concerns when sending information via the Internet. A patient's name should not be used and users need to keep in mind that hackers have been able to access information not

Selected Important Medical WWW Sites

American Hospital Association
http://www/ama-assn.org
Includes the table of contents for recent issues of JAMA, job information, news and press releases and allows searching of abstracts for major medical journals.

Center for Disease Control
http://www.cdc.gov
Includes traveler's health information, statistics from the National Center for Health Statistics and **Morbidity and Mortality Weekly Report**, issued by the Centers for Disease Control, includes statistical data on a variety of topics.

National Institutes of Health
http://www.nih.gov
Includes information on grants and contracts (including **CRISP** database), **CANCERnet** database, AIDS information, pointers to online journals and **HSTAT**, the full-text of the clinical practice guidelines developed by the Agency for Health Care Policy and Research and **Physicians Data Query (PDQ)** - a database of clinical trials in the field of oncology.

National Library of Medicine
http://www.nlm.nih.gov
Includes factsheets, **Locator** (to search the NLM online catalog) History of Medicine images and the **Visible Human Project**, a digitized image of a male, including MRI, and CT.

University of Alabama at Birmingham/Lister Hill Library for the Health Sciences
http://www.lhl.uab.edu/lister_main.html

University of South Alabama Biomedical Library
http://www.usouthal.edu/usa/library/index.htm

Virtual Hospital
http://vh.radiology.uiowa.edu
A digital health sciences library, that is oriented toward patient care and physician education, including a database of multimedia medical information

World Health Organization
http://www.who.org
Includes international travel information, statistics, and reports.

Figure 3

intended for them. A general rule regarding e-mail is to never send any message via e-mail that you would not want published on the front page of the New York Times!

Although many commercial vendors offer products and services over the Internet, the user should be wary of such offerings. Vendors should be checked for reliability and users should never send their credit card numbers online.

Because information issued over the Internet is not always quality controlled, there exists the potential for distribution of harmful medical information. Usually

the quality of the information is determined only by the individual or institution that distributes it. Therefore, it is important that the user verify the sources of the information retrieved.

Computer viruses are a potential problem when files and documents are downloaded from other computer sites. It is recommended that users install a virus detection program on their computer to alleviate this problem.

There is no central governing body for the Internet, therefore there are no standards or rules, because there is no one to enforce them. Gopher menus and web pages are arranged according to the for mat chosen by the site. Addresses for sites can be and are changed or withdrawn without notice.

Lack of universal Internet access can create a society of information haves and have-nots. While access is widespread in university settings, it is not in community hospitals and rural areas.

E-mail is of little use if the recipient does not check his mailbox. In the same manner in which an individual checks his answering machine for his telephone or postal box for messages, email must be checked and answered on a timely basis. Also there is no guarantee that e-mail will reach its intended destination.

The Future of the Internet

While some continuing education courses now exist on the Internet, this will be more prevelant in the future. It is difficult for the health care professional to be away from the clinical setting to attend CME courses, especially the rural practioner, where access is not as easy. Distance learning, via the Internet, will allow the health care professional to utilize CME courses that will enhance their clinical skills.

Syllabi and portions of some courses for medical education are now available over the Internet. In the future, entire courses for medical schools may be taught via the Internet. Students can choose their own faculty from a worldwide selection[9].

More and more documents, including books and journals will be accessible via the Internet. Copyright questions have been a major deterient to full-text documents, but as these issues are resolved, more will become available. This will include textbooks, reference books and electronic journals. Articles will then be available within days of peer-approval, rather than weeks.

While some insurance companies now allow access via the Internet for information and to file claims, this is expected to increase in the future.

Images will become more prevelant on the Internet as access to WWW increases, including radiologic and pathology images. Sound files, such as heart sounds, will also be available.

Electronic exhibts can be made available over the Internets[5, p473], saving the time and expense necessary to exhibit at meetings. These exibits can then be available to a wider audience. New products can be demonstrated.

Communication between physician and patient can be enhanced using e-mail. While the patient may not be able to reach the busy professional via telephone, an e-mail message can be left in the physician's mailbox and answered when convenient[10].

The Internet has and will continue to change the way medicine is practiced as communication is enhanced and as medical information becomes more accessible.

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Book Review: Doctor Whodunit

"Contagion", by Robin Cook, Published by G.P. Putnam's Sons, 1996, 434 pages.
*Reviewed by Steven Rudd, M.D., J.D., M.P.H.**

Successful fiction, in contrast to real life, must be plausible. In general, just as with Westerns or mysteries or romance novels, fiction about doctors and hospitals follows this rule. For this reason, Robin Cook's latest medical thriller, *Contagion*, provides an intriguing reflection on the way the reading public views the people and institutions that care for our health.

To fans of suspense in a biomedical setting, of course, the author requires little introduction. Dr. Cook is the ophthalmologist-turned-writer ("on leave," the dust jacket of his latest book informs us, "from the Massachusetts Eye & Ear Infirmary") who pioneered the genre some two decades ago with *Coma*. That innovative book, in which a zealous but evil transplant surgeon turns otherwise healthy patients into organ donors with no regard for their informed consent, was a huge commercial success. So was the film treatment, which was directed by, incidentally, another popular storyteller with an MD, Michael Crichton.

The medical establishment came off as no less villainous in a later novel by Dr. Cook, *Outbreak* (recently the basis for a TV movie but not to be confused, by the way, with last year's film of the same title starring Dustin Hoffman). In that Cook story, mysterious outbreaks of Ebola hemorrhagic fever in hospitals belonging to "pre-paid health plans" turn out to be the work of a ruthless, mercenary virologist hired by a cabal of rich, politically conservative private practitioners. Their motive? To discredit the upstart medical plans, by whatever means, and 80 preserve their own "market share."

So, to readers familiar with these earlier plot~, it will come as no surprise that in Dr. Cook' s latest offering, the hospital course of the patients involved is far from uneventful. Indeed, inpatients and staff alike at "Manhattan General," described as a former proprietary and teaching hospital taken over by corporate giant "AmeriCare," are coming down with pneumonic plague, tularemia, and a strain of influenza disturbingly reminiscent of the global pandemic of 1918-19. Physicians are baffled; likewise, public health authorities. Only one man can solve the mystery of the contagion, and he is Dr. Jack Stapleton, a cynical but dogged New York City assistant medical examiner.

Jack Stapleton is, if you will, a nineties kind of medical hero. Where *Outbreak's* protagonist was an idealistic young physician who joined the Centers for Disease Control in part because of her misgivings about private practice, the good Dr. Stapleton is described as happy in a suburban ophthalmology practice until the health-plan behemoth AmeriCare forces him out of it. Then, while retraining in pathology, he loses his wife and young children in a commuter-airline crash. Doubly embittered if not frankly self-destructive, Dr. Stapleton decides to specialize in forensics, moves to New York (to Harlem, no less), and takes a job with the ME's office.

In essence *Contagion* is a whodunit, and so it would be bad form for a reviewer to give away too much of its plot. Suffice it to say that the hero's grudge against AmeriCare goads him to discover that the patients dying of exotic infections in its hospital are precisely the ones whom, because of chronic or recurrent illnesses, the health plan finds most "expensive" to cover. Similarly grim suspicions about corporate motivation fuel Dr. Stapleton's battles with Manhattan General's administration, City Hall bureaucracy and, in a cleverly linked subplot, rival New York street gangs. Action and conflict, the critical moving parts of a thriller, abound here in smooth working order.

It is all but redundant to say that a novel by Robin Cook is genuinely suspenseful, a gripping read, a page-turner. Retrettably it is also redundant to point out that its shortcomings are those of the genre, only more so. In *Contagion*, as in its predecessors, characterization and style are notable weak points.

To be fair, one hardly expects these days to meet the likes of Cap'n Ahab or Anna Karenina in light, commercial fiction. Still, the characters of *Contagion* are quirky and potentially interesting enough to merit much more flesh on their bones than the author gives them. Even the driven, wise-cracking Jack Stapleton, with his striking reversal of fortune, comes off as little more than an energetic cipher. Two women characters in particular, a forensic pathologist and an advertising executive, also hint at personal complexities that would reward much more than the cut-and-paste treatment they receive.

Language is an unfortunate distraction here as well. The author's prose style is a lumpy stew of ear-

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grating cliches, awkward phrasing, overuse of the passive voice, and a bad case of nouns-used-as-verbs. (When Jack gets sucker-punched, e.g., "The blow impacted painfully on his head.") The narrative reads, in sum, like a transcript of one's colleagues' or one's own discharge summaries. Please, Dr. Cook, the reader begs at length, treat the mother tongue as gingerly in your current profession as you would a detached retina in your previous one.

These quibbles of technique aside, *Contagion* remains a satisfying entertainment. Undeniably a good story, it is well, if not elegantly, told. Some readers will find the plot, especially the unexpected final twist, contrived; they will have a point. On the whole, however, the book is much more skillfully contrived than most of its peers.

That leaves, at last, the matter of plausibility. Will the public find AmeriCare, so familiarly evocative of any number of contemporary "managed-care entities," a believable villain? More to the point, will readers accept a professional refugee from managed care, a compassionate if battle-scarred MD, as a plausible hero?

Conveniently, the gauge of success for works like this is straight-forward. Book sales tell the story. At the time of this writing, *Contagion* had placed itself solidly in the middle of the *New York Times* bestseller list and was moving up fast.

To many observers, patients and physicians alike, this will come as a hopeful sign.

Should Drugs Be Decriminalized?

*by Ernest Campbell, M.D.**

Recently while researching an article concerning medical ethics, I became fascinated by the similarity between our drug war and the debacle with the prohibition of alcohol in the 1920s. Also, the conservative magazine *National Review* has brought out an entire issue concerning legalizing drug use.

Prohibition, that "failed noble experiment," was the culmination of many years of work by zealous individuals who felt it their moral duty to wipe out the production, selling and consumption of alcohol in all of its forms. In the quasi-religious patriotic fervor of WWI, the prohibition amendment was easily passed, and the enabling Volstead Act was passed over the veto of President Woodrow Wilson. This resulted in a massive new bootlegging industry, criminalizing a large segment of our population, making those dealing with bootlegging very wealthy and causing the federal government to enter into an extremely intrusive and costly war against alcohol.

Repealed in 1932 after it had become obvious that it was not being accepted by the general public, prohibition became a prime example of governmental manipulation and interference by agenda-oriented focus groups. We forget the lessons of history so soon; the analogy of a "drug war" headed by a "Drug Czar" is strikingly reminiscent of the fight waged by the FBI's J. Edgar Hoover against bootleggers, with many of the same arrogant abuses of citizens' freedoms. At the same time, there formed an unholy alliance between the bootleggers and religious zealots in communities, fighting to maintain a "dry" status. A somewhat similar situation has come about with the drug problem, whole cottage industries cropping up in the prisons and drug abuse clinics.

Maybe it's time to recognize that the massive effort to wipe out the production, sale and use of drugs has only added fuel to the fire by creating an epidemic of violence and crime in many respects worse than the drug problem itself. The cost to the American people is enormous in terms of the casualties from associated murder and robbery, not to mention the thousands of people in prison for nonviolent crimes associated with buying, selling or possessing illegal drugs.

The war on drugs has become a failure in that it is diverting much attention away from solving the problem of addiction; it has become a massive federal arm wasting some $75 billion of public money per year, and most sadly of all it is "Encouraging civil, judicial and penal changes often associated with police states."

In addition, William F. Buckley Jr. states in the *National Review* that this is a plague in which consumers spend an estimated $70 billion on drugs, that drugs are responsible for nearly 50% of the million Americans who are in jail today, occupies an estimated 50% of the trial time of the judiciary, and takes the time of 400,000 policemen – a plague for which no cure is at hand, nor in prospect.

Drawing analogies from alcohol prohibition, one could have predicted or noted that it is prohibition that puts the profitability and violence into drug trafficking; it is the illegality that causes the huge cost markup from $3.50 an ounce in South America to a street value often over $3500 per ounce. This obscenely profitable tax-free enterprise enriches drug traffickers, distributors, dealers, crooked cops and lawyers, judges, politicians, bankers and businessmen.

Legalizing the use of drugs (or decriminalizing) would stop all of this dead in its' tracks. Controlled sale of drugs in state or federal stores would most assuredly lead to an increase in use – we do know that the use of alcohol shot up about 25% after the repeal of Prohibition. Righteous politicians and professional drug warriors would predict that use would jump way over the 3 million present users, possibly to a figure of 20-25 million. Surely this would be a cause for concern—but it would be a concern on which we would have a handle—not as it is now—a raging failure leaving chaos in its path.

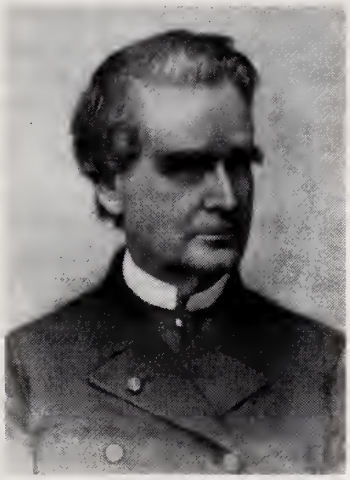
Finally, one of the main reasons to legalize drugs is to free law-abiding citizens of the fears that they will be blown away by some drive-by shooting, killed by a drug addict seeking $10 to feed his drug habit or, worse yet, be rousted out of bed at night by drug agents "legally" breaking and entering your home (castle) in search of illegal drugs and on some occasions, planting drugs to cover their mistakes.

Yes—I think it's time to have another Amendment to the Constitution—this time a "Drug Anti-prohibition" amendment legalizing the controlled sale of drugs and decriminalizing usage. I can just hear the screaming from the Columbian drug lords, the Mexican middlemen and all the leeches here at home growing wealthy off the misfortune of others.

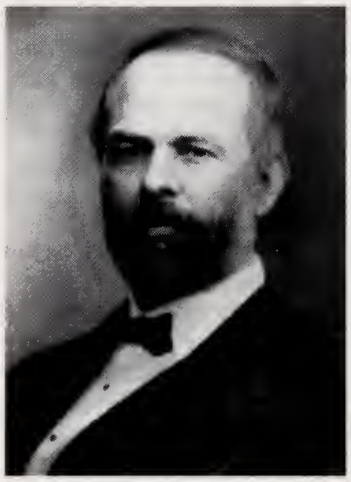
*Orange Beach, AL

J. Marion Sims And Nathan Bozeman: The Fight For Priority In The Surgical Repair of Vesico-Vaginal Fistula

*Paul S. Howard, M.D.**
Thomas W. Sheehy, M.D.†



J. Marion Sims, M.D.
1813-1883



Natham Bozeman, M.D.
1825-1905

The fight for medical priority has been and is a continuing saga in the annals of medicine. Since the dawn of recorded medicine, rival claimants have vied for the glory, the renown and the rewards inherent to a new medical discovery. All too often, however, the true innovator has been denied or robbed of these benefits by either his own silence or by the unscrupulous actions of a competitor. One such fight for priority occurred in the early 1800's in Europe. The renowned French surgeon Philibert Joseph Roux[1] reported the "first" successful repair of cleft palate in 1819, to the chagrin of the great German surgeon, C.F. Von Graefe[2] who claimed to have performed the same operation three years before Roux. But, as is often the case, their claims for priority where probably moot as the French dentist LeMonnier[3] had recommended surgical closure of palatal clefts by suture 40 years previously (1762-1764).

Another disparity surrounded the discovery of inhalation anesthesia. Wells, Morton and Jackson, all New Englanders, claimed priority for the clinical use of either in 1847 being unaware of its previously successful use by Crawford W. Long, a young surgeon practicing in Georgia. Long himself tried to correct the mistake in anesthesia priority and wrote a paper in 1849 for the *Southern Medical and Surgical Journal.* A subsequent paper in 1853 was read before the Medical Society of Georgia although the full text of this work was not published until 1896 in the Johns Hopkins Hospital Bulletin. In 1877, J. Marion Sims attempted to rectify this situation and to establish the priority of Long by writing the "Crawford Long Story" in the *Virginia Medical Monthly.* Undoubtedly, Sims' interest in medical priority stemmed from his lifelong struggle with Nathan Bozeman for precedence in the surgical treatment of vesico-vaginal fistula.

J. Marion Sims[4] (1813-1883) was born of English and Scots-Irish parents in Lancaster District, South Carolina on January 25, 1813. He was basically an uninspired student throughout his undergraduate training.

Sims was to matriculate at the Charleston Medical School in 1833 and graduated in 1834. He then became a student at one of the nation's oldest and most prestigious medical schools, The Jefferson Medical College in Philadelphia. After leaving Jefferson, he began medical practice in Mt. Meigs, Alabama. Later, for personal health and financial reasons he moved his practice to Montgomery, Alabama. There he was to make the most important of his surgical contributions and considering the era in which he practiced, these were profound indeed.

Sims has often been called the "Father of Gynecology" because of his gynecological innovations, although his pioneering accomplishments in intraperitoneal surgery were also important. He performed one of the first cholecystotomies for gall bladder disease and along with Lawson Tait and John Stough Bobbs is recognized as a founder of gall bladder surgery. Similarly, his paper, "The Careful Aseptic Invasion of the Peritoneal Cavity for the Arrest of Hemorrhage, The Suture of Intestinal Wounds and the Cleansing of the Peritoneal Cavity for all Intraperitoneal Conditions" read before the New York Academy of Medicine in 1881, was ahead of its time. Here again Sims proposed innovative concepts which portended the future treatment of penetrating abdominal wounds by years.[10]

Despite prolonged and repeated health problems (malaria followed by chronic diarrhea), Sims was relentless in his efforts to perfect a surgical treatment for vesico-vaginal fistula. Before his eventual success, he spent four frustrating years (1845-1849) working out the details of his operation. He cared for numerous

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slave girls rendered invalid by vesico-vaginal fistulae secondary to the traumatic effects of difficult labor and delivery. It is not clear from the medical literature if vesico-vaginal fistulae were particularly prevalent among the South's Negro slaves. It does appear that *prolapsus uteri* was common and was attributed to the "ignorance and obtrusive interference of our plantation accoucheurs and 'Nigger midwives'..."[6] According to Felice Swados each plantation had a midwife to care for the pregnant laborers who "does not know any more anatomy and obstetrics than of *law and theology* and when they get a case, instead of assisting nature, they try to usurp her place by positive violence.... " It seems likely that prolonged childbirth coupled with traumatic delivery techniques led to many of the fistulae Sims was asked to treat.

It appears from Sims autobiography[9] that all of his pioneering work on vesico-vaginal fistula was done without the benefit of anesthetics. In fact, Sims mentioned that the Negro slave was fortunately a profoundly stoic patient whereas he was unable to operate on several caucasian women because they were unable to tolerate the excruciating pain of pelvic surgery without the benefit of anesthesia. Evidently he was able to obtain some relaxation in his patients by giving them large doses of Laudanum (opium) during the operation and for several weeks afterward. The laudanum besides providing analgesia may have been beneficial in causing constipation which coupled with drainage of the bladder may have protected his surgical closure.

The prevailing thought regarding Negro health care in the mid-nineteenth century was that most plantations were places with a high incidence of disease including whooping cough, hernia and uterine disorders.[5] In other words, the a *priori* argument that slaves were well cared for in the interest of a good investment was only partially valid. Many plantation owners were known to neglect not only their slaves, but also their livestock.

Medical science (sic) of the mid-nineteenth century South generally paralleled the arguments of the physician - ethnologist Josiah C. Nott, M. D. and afforded the Negro a position somewhere between human and ape; certainly dissimilar enough to require a separate textbook of treatment. Dr. E. D. Feuner of New Orleans, editor of the *Southern Medical Reports*, invited articles with "*special attention to the diseases of Negroes*" but contributions did not come. Many prominent Southern physicians prior to 1861 promised articles and even textbooks for the plantation owner devoted to "slave medicine" but none were ever published.

Sims was not the only surgeon of his time to benefit from the stoicism of the Negro as a surgical subject. Lucien Lofton, M. D.[7] wrote in 1902 of his longstanding experience with the Negro as a surgical patient and noted that "sepsis really appears to be an unknown quantity with the Negro." Lofton relates his superior results with Negroes to their "optimism, ignorance of their condition, obedience and sanguine nature." He goes on to describe the generous blood supply and heavy pigment of the skin which tend to make stitch abscesses a rarity even with sterilized silk or gut suture.

Judging from Sims' own description of the operations leading up to his ultimate success in repairing vesico vaginal fistula, it appears he could only have succeeded at that time prior to the invention of anesthesia and antisepsis on the highly motivated, stoic Negro who was thought to be particularly vital and less susceptible to infection. Indeed, Sims became so obsessed by his desire to perfect this operation that eventually he operated on his vesico-vaginal fistula patients for free and even boarded them at his expense. He did require their owners to pay their taxes and to clothe them. Eventually all of these young slave girls cared for by Sims were cured of their fistulae and returned to their owners (according to Sims).[9]

The frustration experienced by Sims over his lack of surgical success during the period from 1845-1849 was exacerbated by the criticism of his medical colleagues and led to his abandonment, leaving him to operate without assistance. Finally his brother-in-law, Dr. Rush Jones, a respected local practitioner, beseeched him to give up his surgical experimentation before he was ostracized completely by the medical community and before he lost his wife and family.

Yet, it was during this difficult four year period that he conceived the "Sims position" and developed the "Sims speculum," the metallic silver suture and the method of securing it, as well as a self-retaining bladder catheter. Finally, in May of 1849 this trying period ended with the successful fistula repair on the slave Anarcha (her 30th operation by Sims) and his publication of the seminal article, "On the Treatment of Vesico-vaginal Fistula" in the *American Journal of the Medical Science* in 1852. The article was 23 pages long.

Perhaps, it was serendipity that at this precise time, when Sims was exalted by his first surgical success and in need of a protégé to help him reap the rewards of his efforts, that the well-trained Nathan Bozeman appeared on the scene.

Nathan Bozeman[4] (1825-1905), the son of Dutch immigrants, was born in Butler County Alabama on March 25, 1825. He matriculated at the Louisville School of Medicine (1846) and graduated in March, 1848.

He remained in Louisville for another year to do postgraduate work with the famous Dr. Samuel Gross. Bozeman settled in Montgomery, Alabama in June, 1849. This was nine years after Sims had moved to Montgomery and one month after Sims' first successful repair of vesico-vaginal Sstula. Bozeman, a quick study, learned Sims methods and soon began trying to improve some of the technical aspects of Sims operation. An opportunity to practice independently arose when Sims suffered another medical relapse (chronic diarrhea) that almost incapacitated him for the next four years. In 1853, just one year after publishing his work on the repair of vesico-vaginal fistulae, Sims moved to New York for the express purpose of improving his health. By now, he was 40 years of age, in poor

health, and financially destitute. His arrival in New York was eyed by the local medical establishment with concern. Most of New York's top practitioners had been trained in the cosmopolitan European medical centers of Edinburgh, London and Paris. While they were interested in Sims work on vesico-vaginal fistula they considered him an upstart Southerner with provincial training.

It was during Sims' convalescence that Bozeman developed an improved fastening mechanism for the Sims silver sutures which he called the "Bozeman button"[11] He was to make other minor changes in Sims' instruments and apparently renamed them "the Bozeman" instruments. Bozeman also found himself at odds with the great Mobile physician, surgeon and ethnologist, Josiah Nott, the famous New York surgeon, Thomas Addis Emmet, and the eminent German surgeon, Professor Gustave Simon who each challenged a claim in priority by Bozeman.

However, the schism that arose between Bozeman and Sims was not entirely the fault of either man. In 1856, Bozeman wrote in the *Louisville Review* that he had improved the fastening mechanism for the Sims Metallic Sutures and thereby, had improved the operation.[11] To Bozeman's credit he attempted to assuage Sims' by writing that he did not wish to "distract from the great credit due to Dr. Sims for his untiring perseverance in bringing his method to its present high state of perfection". This disclaimer did little to cool the mercurial Sims who was incensed further by the accompanying editorial comments of Drs. Samuel Gross and Tobias Richardson. Bozeman was one of their star pupils from Louisville and they featured his paper in the maiden issue of their journal. The accompanying editorial described Bozeman as "the world's most successful operator for vesico-vaginal fistula", a characterization that was entirely false and could not expect to find favor with Sims.

Unwittingly or purposefully Gross and Richardson had helped to stimulate a priority war that lasted throughout the ensuing careers of Sims and Bozeman. From 1856 onward, Sims and Bozeman attacked each other relentlessly and with a passion that served neither well. Sims is said to have become "unduly excitable and jealous of encroachments upon what he considered his own exclusive rights and when crossed he was apt to be outspoken to a degree, beyond the reserve usually found in men of less personality dispositions.." (attributed to Sims' friend, W.O. Baldwin of Montgomery)[10] Indeed, Sims' vitriolic responses, revealed a part of his personality that was to hurt him in his later professional endeavors. Bozeman, for his part, continued to attack Sims through the *Louisville Review* and its offspring the *Medico-Chirugical Review* with the editorial help of Gross and Richardson.

While Sims was establishing himself in New York, Bozeman was traveling and lecturing in Europe. In Edinburgh, he was received favorably by James Y. Simpson, where he demonstrated "his" operation for repair of vesico-vaginal fistula. (Simpson was famous for the introduction of chloroform anesthesia.) At the onset of the Civil War in the summer of 1861, Sims left for Europe where he found a trail of surgical cases left by Bozeman. For the first time he became aware of the full extent of Bozeman's wrath, namely, a claim not only to priority for vesico-vaginal fistula repair but for the entire complement of instruments attributed to Sims.

Fortunately Sims finally did achieve a considerable degree of acclaim and recognition. He went on to become the personal physician to European royalty and to write an important textbook on uterine surgery. Later, he became President of the American Medical Association and made important contributions to the surgical literature and practices of his time. As for Nathan Bozeman, he made significant contributions to gynecology, but he continued to find himself at odds with other physicians regarding priority issues. After the Civil War, he too moved to New York, where he became surgeon to the Woman's Hospital that Sims had begun in 1855. His last attack on Sims, a 68 page manuscript[12] challenge to Sims' priority for vesicovaginal fistula repair went unanswered, for Sims had died earlier that year (1883). That same year, Bozeman opened a private sanitarium in New York where he practiced until his death in 1905 from a cerebral hemorrhage. In answer to the question "who deserved priority for the surgical repair of vesicovaginal fistula," the data tend to speak for themselves. The story of J. Marion Sims and Nathan Bozeman is one of many in medical history elucidating a lifelong fight for medical priority.

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H. Pylori Eradication Therapy

*by Richard P. McLaughlin, M.D.**

Introduction

Suppression of acid production by the histamine receptor antagonists has long been a mainstay of therapy with regard to peptic ulcer disease. However, beginning with Marshall and Warren's research in 1982, a case has steadily been built which implicates *Helicobacter pylori* as the primary causative agent in this disease state. The identification of this pathogen is an excellent opportunity for the medical profession because we are now able to treat the disease rather than suppress the symptoms. The opportunity to treat the disease will also come as a relief to most health care systems. In any plan, one or more of the histamine receptor antagonists is routinely listed among the top ten drug expenses. In Alabama, the cost of the histamine receptor antagonists has increased over 1300% during the past three years, and these agents will cost Alabama Medicaid over $20 million dollars in 1995.

A February 1994 NIH panel recommended that patients with peptic ulcers who are infected with *H. pylori* should be treated with double or triple antimicrobial therapy in addition to antisecretory drugs[1]. Current therapy which includes antisecretory drugs, gastric cytoprotection and avoidance of known risk factors (smoking, alcohol, NSAIDs) has been associated with recurrence rates as high as 95% within the first year following ulcer healing and up to 48% in patients receiving maintenance therapy (i.e. histamine receptor antagonists, sucralfate)[2,3].

In a 1992 study, patients receiving triple antimicrobial therapy and a histamine receptor antagonist had significantly lower recurrence rates at one year (12% vs. 95% in duodenal ulcers and 13% vs. 74% in gastric ulcers) than those receiving a histamine receptor antagonist alone[4]. Other studies measuring one year recurrence rates have shown ranges of 0-21% in those patients in which *H. pylori* was eradicated compared to 33-95% in those patients still infected[2,3,5]. Because greater than 90% of patients with duodenal ulcers and 70% with gastric ulcers are infected with *H. pylori*, an empirical course of therapy may be warranted in some cases.

H. pylori testing

H. pylori testing can be accomplished by biopsy of the gastric mucosa during endoscopy or through noninvasive methods. The noninvasive methods include serologic tests and breath tests for urea (not yet available) and are considered almost as sensitive and specific as the endoscopic biopsy method[6]. Endoscopic biopsy is the most expensive test ($598, range $0-3000) and should be reserved for those patients in whom seriologic testing (range $10-15) or breath tests for urea (not yet known) would not be considered appropriate[7-8]. With the absence of simple and inexpensive diagnostic tests, clinical suspicion or diagnosis may warrant a course of *H. pylori* eradication therapy.

Table 1. Patients to consider for antimicrobial therapy[1,9]

1. Patients with duodenal ulcer who are *H. pylori* positive
2. Patients with greater than 1 relapse per year
3. Patients resistant to histamine receptor antagonists or proton pump inhibitors
4. Patients who relapse while taking histamine receptor antagonists or proton pump inhibitors
5. Patients in whom compliance is poor or refuse long term therapy
6. Patients with ulcer associated complications
7. Patients with symptoms severe enough to consider surgery

Regimen Selection

Two weeks of triple therapy with bismuth subsalicylate (2 tablets four times a day), metronidazole (250 mg three times a day), tetracycline (500 mg four times a day) and 4-8 weeks of a histamine receptor antagonist has been considered the treatment of choice, but concerns regarding drug toxicity and metronidazoleresistance have prompted the examination of other regimens[2-6,10].

Table 2. Alternate Treatment Regimens[2,10]

1. clarithromycin (250 mg twice a day), metronidazole (500 mg twice a day) and omeprazole (20 mg twice a day)
2. bismuth subsalicylate (2 tablets four times a day), metronidazole (250 mg three times a day), amoxicillin (500 mg four times a day) and a histamine receptor antagonist
3. clarithromycin (500 mg three times a day), bismuth subsalicylate (2 tablets four times a day), and metronidazole (250 mg three times a day) and a histamine receptor antagonist
4. clarithromycin (500 mg three times a day), amoxicillin (750 mg three times a day) and an antisecretory drug
5. amoxicillin (500 mg four times a day) and omeprazole (20 mg twice a day)
6. clarithromycin (500 mg three times a day) and omeprazole (20 mg twice a day)

All regimens treat with the antimicrobials and the antisecretory drugs for two weeks. The antisecretory

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H. pylori Eradication

Cost Data

Regimen	Drug	Strength	Frequency	Duration	Quantity	Unit Cost	Total Cost
1	bismuth	2 tabs	QID	14	112	$ 0.07	$ 7.84
	metronidazole	250 mg	TID	14	42	$ 0.04	$ 1.68
	tetracycline	500 mg	QID	14	56	$ 0.09	$ 3.36
							$ 12.88
2	bismuth	2 tabs	QID	14	112	$ 0.07	$ 7.84
	metronidazole	500 mg	TID	14	42	$ 0.04	$ 1.68
	amoxicillin	250 mg	QID	14	56	$ 0.23	$ 12.88
							$ 22.40
3	bismuth	2 tabs	QID	14	112	$ 0.07	$ 7.84
	clarithromycin	500 mg	TID	14	42	$ 3.09	$ 129.78
	metronidazole	250 mg	TID	14	42	$ 0.04	$ 1.68
							$ 139.30
4	clarithromycin	500 mg	TID	14	42	$ 3.09	$ 129.78
	amoxicillin	750 mg	TID	14	42	$ 0.24	$ 10.08
							$ 139.86
5	amoxicillin	500 mg	QID	14	56	$ 0.23	$ 12.88
	omeprazole	20 mg	BID	14	28	$ 3.63	$ 101.64
							$ 114.52
6	clarithromycin	500 mg	TID	14	42	$ 3.09	$ 129.78
	omeprazole	20 mg	BID	14	28	$ 3.63	$ 101.64
							$ 231.42
7	clarithromycin	250 mg	BID	7	14	$ 3.09	$ 43.26
	metronidazole	500 mg	BID	7	14	$ 0.08	$ 1.12
	omeprazole	20 mg	BID	7	14	$ 3.63	$ 50.82
							$ 95.20

Antisecretory therapy, maintenance dosing, one month of therapy

Regimen	Drug	Strength	Frequency	Duration	Quantity	Unit Cost	Total Cost
	ranitidine	150 mg	HS	30	30	$ 1.59	$ 47.70
	nizatidine	150 mg	HS	30	30	$ 1.54	$ 46.20
	famotidine	20 mg	HS	30	30	$ 1.54	$ 46.20
	cimetidine	400 mg	HS	30	30	$ 0.83	$ 24.90
	omeprazole	20 mg	HS	30	30	$ 3.63	$ 108.90
	lansoprazole	15 mg	HS	30	30	$ 3.25	$ 97.50

All costs based on average wholesale price (AWP), MediSpan September 1995 update

drugs are then continued for 2-6 additional weeks. An exception to this is the clarithromycin/ metronidazole/ omeprazole regimen, in which the antimicrobials are only given for seven days. Of the regimens listed in Table 2., the bismuth/metronidazole/amoxicillin combination has shown similar efficacy to the bismuth/ metronidazole/tetracycline regimen. The amoxicillin/ omeprazole treatment has varied considerably, with eradication rates ranging from 28.6 to 100%. Current information shows a rate of 40-60%[6]. The amoxicillin/ omeprazole regimen does appear to offer a decreased incidence of side effects when compared to triple therapy combinations. All other regimens are reported to provide eradication rates of 90%, but this is based on unpublished data rather than controlled clinical trials.

Patient Factors

Therapy should be individualized based on the patient being treated. The triple therapy regimen is considered the gold standard, but it should only be used in highly motivated patients who are likely to comply with a complicated regimen. Patients in whom compliance is poor (i.e. less than 60% of the medication is taken) have lower eradication rates[3,4,6]. This would, theoretically, result in higher recurrence rates. Patients with metronidazole-resistant *H. pylori* would also be candidates for one of the double therapy regimens. These patients have primarily been associated with prior metronidazole therapy, usually in women aged 20-59[2].

Cost Data

A spreadsheet demonstrating the cost of each treatment option (based on AWP) is provided at the end of this document. It contains two sections, the first detailing the cost of the *H. pylori* eradication treatment regimens and the second listing the cost of one month of maintenance therapy with the available antisecretory agents.

The data in the second section may be used one of two ways. First, since regimens 1-4 require an antisecretory drug to be used during and for 2-6 weeks following therapy, the cost of the antisecretory agent to be used can be added to the antimicrobial agents' cost to arrive at a total cost. This was not done initially because of the variety of possible combinations and the fact that it was likely that the patient was already receiving an antisecretory agent, therefore continued therapy would not represent an additional cost. The second manner in which the antisecretory cost data may be used is to compare the cost of *H. pylori* eradication therapy with antisecretory maintenance therapy.

Two recent cost-effectiveness studies support the use of antibiotics for *H. pylori* eradication[7,11]. These studies examined several treatment strategies, but both compared therapy with antibiotics (bismuth, metronidazole and tetracycline or amoxicillin) plus 8 weeks of ranitidine versus 8 weeks of ranitidine alone. Both studies concluded that the use of antibiotics plus ranitidine was more cost effective (ranitidine alone: $398-679, antibiotics + antisecretory $253-391) than ranitidine alone. Furthermore, in the study which included a meta-analysis, antibiotics plus ranitidine yielded equivalent or superior results to the use of an ranitidine alone[11].

Conclusion

H. pylori appears to be present in the majority of patients with peptic ulcer disease. Eradication of this organism has been demonstrated to reduce the recurrence of peptic ulcer disease. Based on the benefit of eradicating the disease rather than treating the symptoms, the fact that the drugs used in triple therapy are not commonly associated with serious adverse drug reactions, and that the cost of the most expensive treatment regimen is less expensive than the cost of 8 months of maintenance therapy with the least expensive antisecretory agent, it would appear reasonable to treat at least those patients described in Table I with a regimen which eliminates H. pylori.

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Helicobacter pylori Eradication

Many articles have been published in the literature recently on the subject of Helicobacter pylori. It has been established that greater than 90% of all patients suffering from duodenal ulcers and over 70% of those with gastric ulcers are also infected with *H. pylori*. Clinically, there is no longer a question concerning whether or not patients with *H. pylori* should be treated with antibiotics, rather the questions center around what regimen of drugs should be used and whether or not to treat patients empirically. Two articles recently published demonstrate the cost effectiveness of treatment (Arch Intern Med, Oct. 9, 1995 and Ann Intern Med, Nov. 1, 1995) and a review article to be published in MASA's journal will help to determine which regimen is correct for your patients. Finally, this method of treatment for peptic ulcer disease is being advocated by Alabama Medicaid and, beginning in February, will become a part of the Drug Utilization Review Program.

Doctor, Why Won't the Pain Go Away?

*Randy Crenshaw, M.D.**

Many physicians have told me, in moments of perfect candor, that, in spite of their best efforts, they believe they've hardly dented the armor of human suffering. When I recite the years I spent laboring over the sick, my heart says "I agree." Perhaps it is our nature to dwell on disappointment, forgetting too soon the good things. Or maybe those souls we can't help outnumber the ones we can. Whatever the reasons may be, most acknowledge a falling short.

Few, though, would deny the fact that progress has taken place. Death and disability have retreated in the face of awesome displays of power. Immunizations and antibiotics come especially to mind; better anesthetics and surgical techniques have also added much.

Yet overall we probably have not made as much progress as we think we have. In the broadest measure of health – average life expectancy – the United States ranks 18th among the 24 developed countries of the world, despite spending more than twice as much of our wealth on medical services as the next biggest spender.[1] A close look at the mortality tables reveals another curious fact: in 1900 America, if a child escaped the ravages of diphtheria, hemophilus and such to attain the age of 7, he could expect to reach 64. Today that 7 year old's life expectancy is 72, hardly a quantum leap.[2] And not all of that increase can be attributed to diagnosis and treatment of disease. Better nutrition, sanitation and education certainly have played a role as well.

Even though the gains in longevity are not all that impressive, some will argue that our quality of life exceeds that of our forbears. That may be true, but it depends on how you define "quality". I'll be the first to admit I like air conditioning, and I would not want to go back to the Deep South of the 1950's where I grew up without any. But the quality of life for many has declined during this generation.

Former Secretary of Education, William Bennett, quantified the deterioration in a 1993 editorial in the *Wall Street Journal*. During the 30 year span 1960-1990 he discovered that "there has been a 560% increase in violent crime; a 419% increase in illegitimate births; a quadrupling of the divorce rates; a tripling of the percentage of children living in single parent homes; more than a 200% increase in the teenage suicide rate; and a drop of almost 80 points in SAT scores."

Yes, things really are bad nowadays. Maybe that's why it feels like we're losing the fight against suffering. Of course, we all fondly remember certain situations where, with skill and knowledge, with compassion and caring, we had an unmistakable impact on the life of another person. When that happens we glow with pleasure at the center of our being. We feel *significant*. We believe our lives have meaning and purpose, and joy runs through us, like a river, refreshing us.

Sadly, that happens too seldom. Most of the cases that fill our days and nights escape either cure or comfort. (I commonly hear 50-80%.) At least three types of patients defy improvement by today's technology:

- those with symptoms but no evidence of organic disease
- those with terminal illness, and
- those whose sickness is caused by destructive behavior, but who will not change
- (a fourth category might be those who resist the inevitable processes of aging)

You will search in vain to show that we have enhanced the health of these people. In fact, science cannot help them. The solutions to their problems lie in another realm, that of metaphysics. It is metaphysics that addresses the human need for a clean conscience; for peace of mind; for meaning and purpose in life; for love and respect; for dreams to come true.

Medicine and its practitioners cannot purge the guilt that stains the conscience; cannot clear up the confusion (about what is real and important in life) that clouds the mind; cannot implant certainty of purpose in a will that senses that its existence is meaningless; cannot heal the heart that has been broken time and time again; cannot console the imagination that has lost all hope.

Yet we relentlessly order tests, prescribe pharmaceuticals and invade the bodies of these suffering souls. We know, deep inside, that our labors will effect little, but we are pushed along by people demanding relief from their misery or pretending they will not die. We are driven by a fear that they (and their lawyers) will think we're lazy and stupid, or will take their business elsewhere, if we don't do something. If we are really going to help them, though, and not just play doctor, we must persuade them to face the hard places of their lives. When science fails we must steer them toward the metaphysical.

Objection! We are doctors, not poets or prophets; we

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don't know how to do that. We're scientists; our interest is the mechanics, not the meaning, of life. Thankfully, formal training is not a prerequisite to helping. Kindness and honesty, however, are. We must find a way to tell people when medicine has no more to offer.

But, you will object again, we can't leave people without any hope. And I will agree. I'm not proposing that we abandon them. What I am calling for is a switch in parts – from "techno-doc" to "talking-doc". I am intimating that we encourage them not to run from their pain but to embrace it and to search for a *purpose* in their suffering.

Had it occurred to you that pain and suffering have a purpose? When I first met with the idea years ago it surprised me. But the more I investigated it the more certain of it I became. After I experienced it first hand I became as sure of it as of anything in my life.

I know how preposterous it sounds to you grizzled veterans who have seen thousands of suffering people, some of whom rival Job in raw anguish and the cumulative weight of whose pain is incalculable, that, behind the agony, there is a deeper purpose that we cannot see or feel or measure. How could pain possibly have *meaning*? C.S. Lewis, the Oxford don whose life story is portrayed in "Shadowlands," posed the question in a tiny treatise he wrote in 1940 called *The Problem of Pain*. In it he said that "pain is God's megaphone to rouse a deaf world." It "shatters the illusion" that we're ok and "plants the flag of truth within the fortress of a rebel soul."[3]

If Lewis is right, and I believe he is, our immediate response to such a notion will be to ask what God is saying to us through his cosmic loudspeaker. Is it not simply to turn from our wretched self-centeredness to follow him, submitting our wills as creatures to his will as Creator- to take, as the gospel of Matthew says, "my yoke upon you and learn from me?"[4]

Psychologist Larry Crabb, plumbing the depths of this mystery in the generation following Lewis's, arrived at the same conclusion: "It is pain that makes us stand still and think about something outside ourselves, something more important and more interesting than our concerns about who we are and how we're getting on. It is pain that compels us to ask terrifying questions about life and God."[5]

The inclination to put ourselves first infects every one of us. We are uncompromisingly committed to finding comfort in an uncooperative world. Because we don't believe that God's path is consistent with our comfort we have set out on our own. As Crabb put it, "we insist that there must be a way to make life work using material and strategies we have at hand. We are determined to do all that we can to make coming to God unnecessary."[6]

The poet William Ernest Henley immortalized the words that convey this universal creed:

> "I am the master of my fate, I am the captain of my soul."

However, because we reside in society with other people, when we rearrange our world to suit ourselves, we tear someone else's down. God reveals this selfish defiance in us through our pain. He calls to us through his megaphone to surrender our fascination with ourselves and learn to love. In that sense pain and suffering serve a metaphysical purpose, and if we, by endlessly testing and treating, lead our patients to believe that life can be reduced to a series of physiological processes, we may prevent them from hearing and acting on that call.

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Spoil Your Patients – They Love It

*Walter C. McCoy, M.D.**

When, if ever, is unsolicited advice ever appreciated! And I prepare this article realizing all too well in this day of HMOs and "managed care" that to many these ideas will appear ridiculous, to others merely frivolous—to a few possibly meaningful.

I write this from over a half century of busily practicing my chosen profession of internal medicine, having two years ago retired from my wonderful patients. These thoughts are based not only on what I have read, but also on what my ex-patients tell of their new doctors. I have been accused of spoiling my patients and to this accusation I plead guilty. Consistently I have tried to do all I could for my patients, for I consider all of them as my friends.

Many years ago while working on the Peabody wards at Boston City Hospital, I found an article written by this same Dr. Peabody called, "The Care of the Patient."[1] Even then (1927) Dr. Peabody was aware of the unhappiness many feel about our great profession. He observed, "The most common criticism made at present by the older practitioners is that the young graduates have been taught a great deal about the mechanisms of disease—or to put it more bluntly they are too 'scientific' and do not know how to take care of patients."[1] He further emphasized the need for the doctor to take a much more personal relation to this patients. "The good physician must know his patients through and through, and his knowledge is bought dearly. Time, sympathy and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient."[1]

Since Francis W. Peabody wrote those challenging words in 1927, medicine has continued to evolve. Certainly we are more scientific and surely more aware of psychosocial and functional disorders. Why then are so many unhappy with their doctors? There are no easy answers. Reviewing some of their patients dissatisfactions, Joos et al [2] found fully a third of the patients' needs were unfulfilled. Most of these unmet needs involved family and emotional problems and requests for more understanding of their medical difficulties.

Patients' expectations were studied by Drs. Sanchez-Menegay and Stalder.[3] They found that physicians gave few discussions about preventive measures and none about prognoses.

Studying why doctors and patients disagree, Drs. Rohrbaught and Rogers[4] discovered that overall discrepancy was greatest in cases where the importance of psychosocial problems was minimized. Careful attention to these problems greatly improved patient satisfaction.

A most perceptive article by Dr. David Scott[5] entitled "Are Your Patients Satisfied?" lists several complaints that patients express. They complain that the doctor didn't listen to them when trying to describe their complaints; patients felt hurried, and were interrupted frequently. In some cases the practitioner wouldn't even talk to them. Often the doctor failed to do any tests and the patients worried that some serious illness could be missed. Some just didn't like the doctor's attitude. Several signs of patient dissatisfaction were: crescendo phone-calling; third party calls; and trips to the emergency department. Dr. Scott found that in dealing with these unhappy ones that they could be helped by improved communication, by giving more time and attention to their needs, and—despite their negative feelings—continuing to care for them.

Lawrence H. Brandt in his Presidential address to the American College of Gastroenterology[6] observed several definite areas of patients' complaints: the doctor didn't spend enough time with them; he wasn't friendly; he failed to answer questions honestly and completely; medical problems were not explained understandably; and finally, the doctor didn't treat them with respect. Patients do desire effective communication. He observed that those who clearly understood the need for certain medications and who feel their doctor is caring and supportive are more likely to get better. The one who really relieves suffering is the compassionate physician. He quotes Paracelsus who described a healing relationship as one of caring, compassion, curiosity, and competence blended with hope, humility, and humor. Dr. Brandt also quoted Thomas that "...touching (is our) real professional secret...the oldest and most effective act of doctors."[6] Dr. Brandt's article was entitled, "Holding a Hand is Often as Important as Examining One." And, he stated, "...when we prescribe pills, tablets, capsules, and caplets we must do so with equal doses of compassion,

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support, and understanding."[6] A final quote from this erudite author: "When we talk to our patients and, perhaps more important, when we listen and hear what they are trying to say, when we are being compassionate, and sensitive to their needs we are helping them not only feel better, but do better. You'll find to your surprise, that you'll feel better too. "[6]

Physician competence in diagnosis and therapy is fundamental to medicine. One area where that is especially true is in the field of refractory functional gastrointestinal disorders. Douglas A. Drossman[6] in a masterly article gives a clinicians most brilliant discussion of this severe problem. He emphasizes four main approaches. First, he uses a diagnostic strategy that incorporates symptom-based criteria, a screening evaluation, early symptomatic treatment, symptomatic monitoring, and reassessment. Second, at the first visit asking questions about the psychosocial contributions to the illness. Third, by empathy, reassurance, education and a negotiated and realistic plan he develops effective patient-physician relationship. And fourth, he provides the option for psychological consultation and treatment as a means to help the patient better control symptoms. Such an approach, he believes, will improve patient and physician satisfaction, adherence to treatment, and clinical outcome.

Understanding many of these problems our doctors and patients express, how best can we resolve them and even go a step further and actually "spoil" our patients? Medical complaints are the most critical. Making the precise diagnosis and following with the finest available care is our imperative. That is why we are doctors in the first place.

Next in importance, I list the temporal. Respect your patients' time. Scheduling visits can be done so that no one waits over 30-60 minutes. Of course, emergencies will arise, but most persons can accept that necessary inconvenience. Allowing a little time between every two or three patients for phone calls can be most helpful. There are just some calls that need to be answered not by the assistant, but by the physician himself. Leaving a patient in an examining room, especially if half undressed, is frustrating and can be avoided. Telephoning reports of tests can be done by assistants, but I believe can be better done by the doctor, and, helps further to spoil our patients.

A most vital area is communication. Patients really need to be listened to without interruption. This listening is something apparently not taught in most medical schools. Proper listening is extremely important and can be the most rewarding part of the consultation. Questions can and will come later, but in-depth listening is something all patients truly appreciate. Good listening further spoils these lucky patients. They will develop confidence in you and tell you their most secret thoughts. A final area in spoiling your patients: make your charges as reasonable as possible. Excessive charges alienate and infuriate—make the patients think that money is more precious than caring. This is not asking the doctor to be cheap, but to be considerate and reasonable. Unfortunately if the patient is in the Medicare range, or if the physician is in an HMO or "managed care" he may have little if any control.

Having done all of the precise diagnosing and treating, respecting the patients' time, listening and communicating fully, making expenses reasonable, what more can we do to spoil them? We can make several important efforts—take a more personal interest in their psychosocial and family problem; remember anniversaries, and birthdays.[8] We can respect their religious and spiritual feelings. When we have done everything we can do, as the inspirational Dr. Shuler on the West Coast exclaims, "That is not all you can do! You can pray! "

The friendship that develops by our spoiling them will result in our patients talking proudly about "My Doctor! "You may have to work harder and longer taking care of their friends whom they will refer to you because of your superb therapy. And the patients and you will feel better. SPOIL YOUR PATIENTS—THEY WILL LOVE IT!

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If You're Dead, Press 9

by Ralph B. Pfeiffer, Jr., M.D.

Welcome to HMO America for your health maintenance[1] is our number one concern.[2] Your call is important so do not hang up. Please select from the following choices: If you think that you have a life or limb-threatening emergencies, press one now...Welcome to HMO America, we value your call, so stay on the line.[3] If you think you have a limb or life-threatening emergency and need to go to a hospital before the end of this phone message, do so now. Remember, however, if HMO America determines in hindsight (20-20) that you did not have a limb or life-threatening emergency, you will be responsible for all of the hospital and physician charges which could run into several thousand dollars.[4]

Please select from one of the following questions: If you are having head pain, press one now. If you are having chest pain, press two now. If you are having abdominal pain, press three now. If you are having leg pain, press four now. If you do not know where the pain is located, press five now. Incidentally, if you are still using a rotary phone, you are going to die.

You have selected Item number one, headache. If the pain is in front of your head, press one now. If the pain is in the back of your head, press two now. You have selected, number one, pain in front of the head. If the pain has been present for less than one week but greater than an hour, press one. If the pain has been greater than a week, press two.

You have selected number two, chronic headache which has a 95% chance of being a non-emergency. Should you elect to wait until tomorrow to see your gate keeper HMO doctor rather than going to the emergency room, you will receive ten discount coupons on your next premium payment...

You have selected item number two, chest pain as the location of your emergency. There are many causes of chest pain, other than heart attack and the majority can be treated over the phone by our nurse manager.[5]

Please select from the following menu concerning your chest pain. If the pain is substernal radiating into the neck or arm, press one now. If there is shortness of breath associated with it, press two now. You have selected item number one, substernal, radiating chest pain. If you have had the chest pain for greater than thirty minutes but less than four hours, press one.

You have selected chest pain for greater than thirty minutes but less than four hours. Please select from the following: press one for yes, two for no: 1) Did you eat any spicy foods that may have caused heartburn? 2) Have you ever had this pain before and did not kill you? (Remember press one for yes and two for no.) 3) Has your mother-in-law visited? 4) Are you currently being audited by the IRS? 5) Are you currently taking medications for heart disease? If so, please spell these medicines out on your convenient touch-tone telephone and remember to press the pound sign after each medication.

You have scored an eight out of ten on our automated health maintenance phone system. If you still want to talk to one of our nurse managers, press one. If you think the problem has "terminated," please hang up now as other fellow subscribers may be trying to call our system...

Your call is important so do not hang up. You have selected one, so please do not hang up, your call will be answered by the next available nurse manager...All of our nurse managers are currently helping fellow subscribers and the next available manager will get to you as soon as possible...

If you feel that you have made this call in error, please hang up now. Thank you for using our health maintenance system for your health.[6] Have a nice day. Tell a friend or family member about our plan and if they qualify[7], you will receive 10% reimbursement on your next premium. Have a nice day and remember the next time you or your family needs health care, think of HMO America, where we manage your health care so your physicians[8] do not have to.

REFERENCES

1 "Health Management."

2 We want healthy people who do not need medical care.

3 If you do not die first. A paid-up subscriber who dies at home costs nothing.

4 See Section B-3 of your subscriber's manual.

5 R.N. or L.P.N. who receives bonuses for discouraging health access.

6 Corporate profits is our primary concern.

7 Healthy ones only

8 Self-centered, money grubbers.

Vascular Surgery, Mobile, AL

Investment Insights

*by Tommy Jackson**

Since you can't take it with you, giving it to charity may be the next best thing.

In general, the tax law allows you to deduct an amount equal to the value of your charitable contributions, as long as you itemize your deductions on your tax return. One way to fulfill your desire to give to charity while reducing your tax bill is to donate appreciated securities instead of cash.

By donating appreciated stock, for example, you can obtain a tax deduction for the current fair market value of the stock. Another plus: you avoid paying taxes on the capital gain you would have realized if you had sold the stock and donated the proceeds.

For example, suppose you own $2,000 worth of stock that you originally bought for $500. By donating the stock to charity, you can deduct the stock's full $2,000 value as a charitable contribution, and the $1,500 gain will escape taxation. And, because charitable organizations are tax exempt, the charity can sell the donated securities without being liable for any tax on the gain.

Compare this to selling the stock yourself first, paying taxes on the gain and giving the after-tax remains to charity. If you're in a 28% tax bracket, you'd pay $420 in taxes on the gain and would only have $1,580 to donate and deduct.

Keep in mind, however, that the appreciation on a donated security is considered a tax preference item for purposes of the alternative minimum tax. In addition, charitable contributions of appreciated property may only be deducted in the current year to the extent that they constitute no more than 30% of your adjusted gross income. Charitable contributions of cash or other types of property are subject to other limitations.

If you intend to give a rather substantial amount, you might consider another way to make charitable contributions – setting up a Charitable Trust.

Two parts of an asset may be put into a Charitable Trust – the income interest or the remainder interest. The income interest is the right to receive income payment earned on the assets during the term of the trust. The remainder interest is the property remaining when the income interest is completed according to the terms of the Trust.

With a Charitable Trust, you can receive a current tax deduction by donating either the income or the remainder interest, while keeping other interest for yourself or your heirs.

Consult your tax advisor before undertaking any gifting effort. Regardless of the method you choose, giving securities to charity can be a great way to gain personal satisfaction and reduce your tax bill.

* Vice President, Investment. This article was provided by A.G. Edwards & Sons, Inc. member SIPC.

Incident Report – 1955
Primum non nocere

Novitiate, fervently, metaphysically manotactile,
– lacking skills.
Fluid-filled elder, lips stained pinkish-bubbled froth,
–heart failing vessels blocked.
Arrhythmic sawteeth on coiled lined paper,
footprints of death.
Dammed with rust, blood trickling,
enfeebled muscle lags the pace.

Foxglove, mercury, tourniquets ameliorate.
Wet lungs aerate – oxygenate, perfuse, cyan shades to rosy,
– not so wild-eyed, bubble drowning,
Bradycardia, elephantine legs shrink,
– gallop gone, output crowning!

Improvement – but chemistries show
–a low potassium, which we all know
Necessitates repair – needs more stat.
Pushed—instead of drip,
arrest, the tracing goes flat!

The novice, in terror, codes,
compounding his error.
Opens the chest,
(observed once before
on a medical ward floor).
Desperate to rectify his mistake,
his own heart sinking –
Inserts his hand into the chest–
unthinking–
Finds the heart, feels the flutter,
Squeezes hard
–and plunges through weakened muscle
soft as butter.

Emotional memories remain
often altering the future,
Mistakes forgotten
set no alarm
Learned experience benefits the many,
"First-do no harm!"

Ernest S. Campbell, M.D.
1996

Answers To Risk Management Questions

*By Mutual Assurance**

What Precautions Should be Taken When Taxing Confidential Medical Records?

Faxing medical documents is quick and convenient. However, take precautions to safeguard the confidential material contained in most medical documents. Physicians and support staff are expected to act as reasonably prudent people when faxing records.

Some fax guidelines appropriate for medical offices include:

1. In general. fax patient data only when it is needed immediately for medical care. Standard mail or delivery services normally should suffice for other situations;
2. Place your fax machine in a secure area, such as in the medical records section of the office. If possible, determine the security of the receiving fax machine. If that security is suspect, consider an alternative method of sending the data; and
3. Ask the receiving party to call and confirm receipt. If the document has been sent to a wrong number, call the recipient and ask that the document be destroyed. Include on the fax cover sheet a statement that the information is confidential and, if it is sent to the wrong party, it should be returned to the sender immediately and should not be read by the wrong party.

Place the faxed document in the patient's record. Some older fax machines use thermal paper which is highly acidic, and can decay to the point of illegibility in only a couple of years. Because the acid also can be transmitted to other documents, photocopy the faxed documents on regular paper before placing them in the patient's record.

What Should Patients Know About Office Policies?

A physician's policies about office hours, appointment scheduling restriction on medication refills, referrals, fees, special charges, billing, and other issues should be explained to new patients. Patients should understand office policies before a problem develops or a dispute occurs. Otherwise, misunderstanding can interfere with the physician/patient relationship.

An inexpensive patient education brochure is an effective way to explain office policies including information about: the physician; hours to call for medication refills; what the patient should do in an emergency if the physician is unavailable; on-call coverage; billing policies, especially extra charges; and the patient's responsibility in the physician/patient relationship.

**Submit your risk management questions to Tom Phelps, assistant vice president, Risk Management, Mutual Assurance, Birmingham 800-282-6242; fax 205-870-1756.*

Usha Bhuta
A-MASA President

A Success Story... Auxiliary To Alliance A-MASA 1982-1996

In a recent Frank and Ernest cartoon, while looking at the National health plan, Frank shows concern," This says they're going to reduce Medicare." And Ernest replies," Yes. They're taking out the I CARE PART." Well, who will pay to the doctor is an ongoing issue since early eighties. In 1983 U.S. President, Ronald Reagan said, "We are shifting responsibility away from federal government, but to do so requires that the needs of people be met at the local level." Our A-MASA President Patty Estock reminded the members, "The local or community level is exactly where auxilians are, ready and waiting for their tremendous potential to be utilized. As government budget cuts phase out programs and services, our auxiliary can step in. Community health services and education efforts need to continue. Medical auxiliary, working in partnership with local governments, their medical societies and other volunteer groups can establish new ways of meetings these needs."

With tremendous budget cuts in health care, the Medical Association of the State of Alabama started a program "Project Doctors Care", this program was designed to help the recession distressed segment of our population. Our auxiliary members worked hand to hand by staffing the phones. At the annual State Medical Convention MASA praised our auxiliary members for their support.

In 1984 physicians and their spouses were encouraged to participate in "Project Medvote." Our Auxilians encouraged members to support this project by contributing to AMPAC and ALAPAC, and by remembering to vote.

In 1985-86 the malpractice litigation became the growing concern. Our National Organization started a program on how to cope with lawsuit. In an article, "Medicine is Fighting for Justice," MASA Assistant Director of Governmental Affairs, Mr. Michael Ward, showed concern about the multi-million dollar judgements awarded in South Alabama. Mr. Ward prompted the MASA and A-MASA to get ready for an extensive legislative battle to enact some revisions to current tort law. MASA considered some ten bills which would provide some relief to the physicians and malpractice insurance carriers around the state. We are still fighting this battle.

In late eighties A-MASA worked on several health and safety i programs. Through the child restrain loaner program our countiea raised money to buy car seats. AMA developed a program with the help of, a major car manufacturer to educate the public on proper seat belt usage. A film and a brochure was available for the local auxiliaries.

AIDS became a very publicized problem. The AMA launched an attack on AIDS by starting a nation-wide campaign of public awareness of this problem. Our AMA Auxiliary outlined steps to take to inform our teenagers and A-MASA stepped in to take a lead.

Smoking spread like plague in youth of America,

and A-MASA started efforts to educate teens against this life threatening habit. We along with MASA are still struggling to fight the tobacco industry.

In the 90's the health focus has been adolescent health, AIDS education, breast cancer and family violence. Two Alabama counties were recipients of the prestigious HAP Award presented by the AMAA. Mobile County Medical Auxiliary was presented the award in 1992 in recognition of Camp-Rap-A-Hope, a camp for children with cancer. They were also the 1995 recipient of the William Crawford Gorgas award presented by the Medical Association in recognition of outstanding service to the community in the health field. In 1994, Jefferson County Medical Auxiliary received the HAP Award for Body Trek, a mobile health education facility. Two new Alliances were formed in 1994-95: Chambers County and Tallapoosa County.

In 1995-96, AMA and AMAA joined hands to focus on Violence. "Stop America's Violence Everywhere" was the national theme for states to follow. This campaign was kicked of on October 11, 1995 and was called SAVE Today. A-MASA joined hands with MASA and printed 62,000 youth survival cards with 1-800-emergency numbers children can use to seek help in crisis. These cards were distributed to all public school seventh graders in Alabama.

In the nineties, medical families faced challenges from legislators, insurance companies, HMO's, trial lawyers, patients and within their own families. Physicians' spouses needed to be stronger than ever. The American Medical Association Auxiliary voted in June of 1993 to change their name to The American Medical Association Alliance with the tag line "Physicians' spouses dedicated to the health of America." The Auxiliary to the Medical Association to the State of Alabama followed suit in April, 1994, voting to change their name to the Alliance to the Medical Association of the state of Alabama. People do get confused with this new name because many~ Alliances mushroomed in different fields since Hillary Clinton started many Alliances. At one meeting, when I introduced myself as President of State Medical Alliance, people looked at me with confusion and a doctor in the audience said, "She represents all those women who sleep with the doctors." I was not ready to take such a big responsibility, so I made myself clear, "I do not represent all the women who sleep with the doctors but I represent only the women who are licensed to sleep with the doctors."

INFORMATION FOR AUTHORS CONCERNING MANUSCRIPTS

Manuscripts from member physicians should be typewritten, double spaced on white paper 1-1/2 x 11 inches with adequate margins. Two copies should be submitted. Authority for approval of all contributions rests with the Editor. *Alabama Medicine* reserves the right to edit any material submitted. The publishers accept no responsibility for opinions expressed by contributors.

Style: The first page should list title (please be brief), the author (or authors), degrees, and any institutional or other credits. Bibliographies must contain, in the order given: Name of author, title of article, name of periodicals with volume, page, month – day of month if weekly – and year. Number should be limited to absolute minimum. References should be numbered consecutively in order in which they appear in the text.

The Stylebook/Editorial Manual, published by the AMA, is the general reference for questions of style. It is particularly useful in the proper presentation of data. When conflicts occur between usage, etc., by an author and the stylebook, these will be resolved in favor of the author if his method is persuasive and logical.

Helpful to many writers is *The Elements of Style* by William Strunk, Jr., and E.B. White, which emphasizes brevity, vigor and clarity.

Final authority on grammar is Webster's *New International,* Unabridged, Second Edition.

Length of Articles: Articles should not exceed 3,000 words (approximately 3-4 printed pages). Under exceptional circumstances only will articles of more than 4,000 words be published.

Illustrations: Illustrations should be numbered consecutively and indicated in the text. The number, indication of the top, and the author's name should be attached to the back of each illustration. Legend should be typed, numbered, and attached to each illustration. Photographs should be clear and distinct; drawings should be made in black ink on white paper. For photographs, glossy prints are preferred.

Communications should be addressed by *Alabama Medicine*, The Medical Association of the State of Alabama, P.O. Box 1900, Montgomery, Alabama 36102-1900. Telephone (334) 263-6441, or (toll free in Alabama) 1-800-239-MASA.

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Dr. Williams' career reflects his commitment. He worked as a pharmacist, then went back to school and earned his MD. He paid for medical school by committing to work three years at a community health center — Southside. Nine years later, he's still there, still giving.

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Chemical dependency, alcoholism or other impairment can be a threat to your life, family and livelihood.

The Impaired Physician Program is managed by the Medical Association of the State of Alabama and provides:

- *Intervention*
- *Education*
- *Guidance to hospital, staff and employees*
- *Recovery monitoring*
- *Structured support groups*
- *Family assistance*
- *Advocacy*
- *Liaison*
- *Quality Assurance*
- *Confidentiality*

For information call: 1-800-239-MASA or 205-263-6441
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